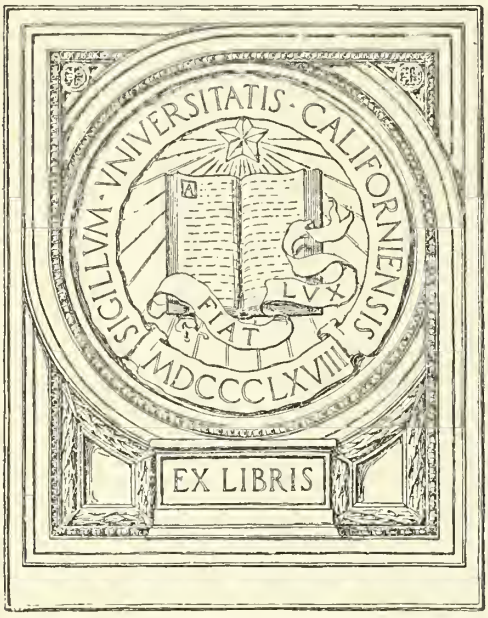
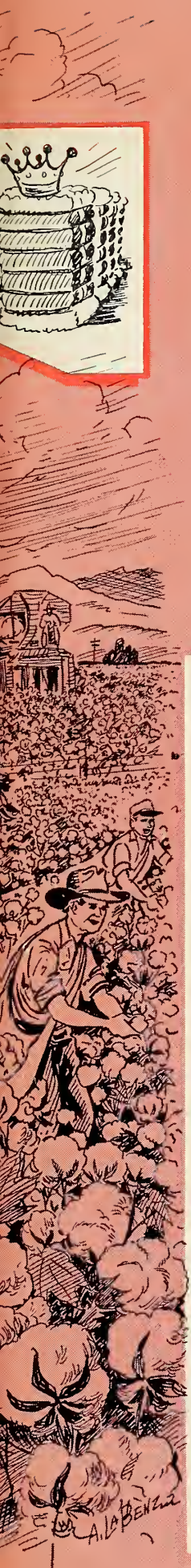
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Arizona Medicine

Journal of ARIZONA MEDICAL ASSOCIATION

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VOL. 12, NO. 1 JANUARY, 1955

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ARIZONA MEDICINE
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Original ARTICLES

COCCIDIOIDOMYCOSIS*

J. Reichert, M.D.
Phoenix, Arizona

AMONG the various fungus systemic infections which afflict the animal body, great attention, extensive studies, and observations were made particularly of coccidiodes immitis, reported by Rixford and Gilchrist in the U.S.A. in 1896 and also in other countries since 1892. In fact at this time it had already been reported by Wernicke and Posodas in Argentine, who observed skin lesions produced by C. immitis. According to them they were able to isolate a protozoan-like organism. It seems that Ophuls, Moffitts, and Ash were able to culture the fungus for the first time in 1900. Until about 1912 there were only about twenty-four cases reported in the literature; they were discussing particularly localized skin affections. For a quarter of a century no further progress was made and the entire investigation was completely dormant. In 1936 to 1938 extensive studies were made by J. Smith, Gifford, and Dickson who presented evidence that C. immitis was the eliologic factor in causing a definite disease entity. For some time they were able to isolate the fungus from infected cases present in the San Joaquin Valley of California.

The main endemic areas infested with Coccidiomycosis have been found to be the southern parts of the San Joaquin Valley of California, southern Arizona, Nevada, Utah, parts of New Mexico, and the western and southern parts of Texas. There were cases reported from Argentina and Uruguary and the causative agent was found in the soil and to be endemic in the subtropical climates, especially in the arrid desert areas. Although there is not much information available from certain parts of the continent where medical attention is lacking or insufficient, such as in the extensive areas of Asia and Africa, this disease may be very common and appear particularly as a skin manifestation. There are cases reported from Italy, Southeastern Europe, Hawaiin Islands, Chaco region of Argentina and from many other latitudes of both hemispheres.

As stated above, it was established that the causative agent, C. immitis, grows in the soil of the mentioned areas. It has both a sporogenic—parasitic phase in the animal and vegetative—saprophytic phase in the soil. The type of growth of the saprophytic phase is found on culture media producing a fluffy, cottony aspect of delicate branching hyphae which develops characteristic arthro-or-chlamydo-spores on Sabouraud's glucose agar medium at room temperature. (Fig. 1) This vegetative or saprophytic material of C. immitis with its spores are carried about for great distances by dust storms, valley and desert breezes, and lands on its hosts.

Once the spores take refuge in those subjects, they undergo the parasitic stage, forming characteristic spherules, with doubly refractile walls and filled with endospores. When the spherules become mature they rupture, spilling their contents, similar to the biological cycle of malaria. (Fig. 2) The liberated spores in turn will repeat to develop additional spherules, creating a chain reproduction. The spherule with its endospores, in its parasitic phase of coccidiomycosis, does not transmit direct infection from

Presented at a medical meeting in Tel-Aviv, October, 1953 at the invitation of the Israel Medical Association and read at the Memorial Hospital staff meeting, June, 1954.



FIG. 1:
Saprophytic phase of Coccidioimmitis as it is found on culture media producing a fluffy, cottony aspect, on Sabouraud's glucose agar medium at room temperature. The culture was obtained through the courtesy of Onic O. Williams, M.D., Phoenix, Arizona.

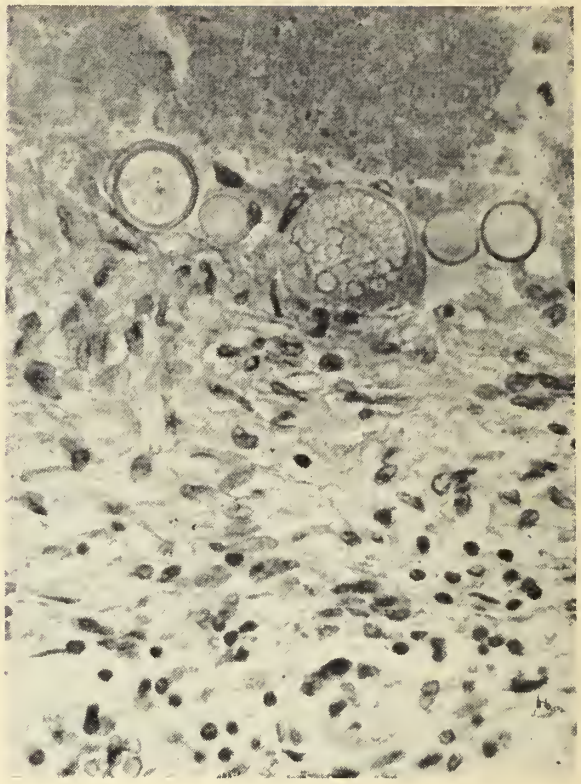


FIG. 2:
Brain tissue containing typical spherules filled with endospores. These spherules represent the parasitic stage of the spores which take refuge in the animal tissue. Once these spherules become mature they rupture, spilling their contents, similar to the biological cycle of malaria.

This case represents the fatal outcome of a disseminated form of coccidiomycosis with resulting coccidiomeningitis. The autopsy was performed on a 3 year old boy who was afflicted only several months before with a typical cocciodio-pneumonitis.

The reproduction from a slide was obtained through the courtesy of: Fournier, Dudley T. Sr., M.D.
Enlargement 1: 540

person to person and, therefore, it does not assume epidemic proportions. The saprophytic phase with its chlamydo-spores is highly infectious, having caused many laboratory contact infections as reported on different occasions. Contact infestation confirmation came from a case of a medical student who, nine days after handling a C. culture in Dixon's laboratory, developed typical symptoms of the disease. During World War II large training centers in the western states afforded great opportunity for investigation of tranmission of the disease by epidemiologists, pathologists, and clinicians. The incubation period from direct contact infections is from nine days to two weeks. In C. Smith's laboratory, twenty-one persons showed positive skin tests. Most of the positive cases had no evidence of symptoms. The disseminated cultures containing arthro-spores often may cause very extensive infections. One of the most phenomenal occurrences was that C. infections took place in the second and third floors of a building in which C. E. Smith's laboratory occupied the first floor, where extensive investigation of the fungus was made. (Fig. 9) Nevertheless, in spite of accumulated evidence some authors like D. T. Smith have stated that handling of such cultures are safe, if the loope used has been moistened with water. Following the above mentioned environmental infestation, E. C. Smith discontinued the open method of examining cultures, submitted for identification. In order to avoid additional infection. Actually there are designed ingenious protective cabinets in which cultures of spores can be handled with safety.

The disease of C. immitis is often named: "Valley Fever, Desert Fever, Desert Rheumatism, San Joaquin Fever". When the respiratory system is involved, C. is frequently confused with



FIG. 9:
The upper three vials represent three cultures obtained of Coccidio immitis on Lipman Oxgall with 20 units of streptomycin at room temperature, after about 48 hours. Two of these specimens are on Sabouraud's glucose, cultured at room temperature. The Petri-dish growth was obtained on blood agar which, according to Gorczyca, is the most favorable medium for fast growths. All specimens are of 48 hours duration and it shows the differences of growth in the specified mediums. paring to the above.
These cultures were prepared by Leonard Gorczyca, B.C., Bact.

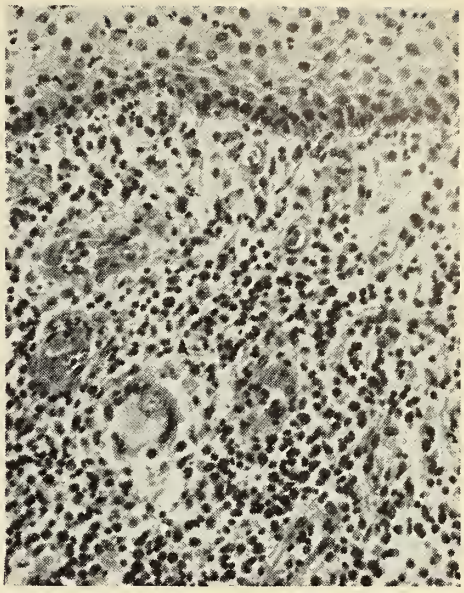


FIG. 5:
W. S., Male. Middle-aged. Dec. 1954. Still hospitalized. Disseminated Coccidioidomycosis. Skin lesions in the anal region, representing typical Cocci granulomas. It is possible to see typical spherules with endospores. One of them shows the rupture, in the process of spilling its endospore content.
This reproduction was obtained through the courtesy of Donald J. McNairy, M.D., Phoenix, Arizona.
Enlargement 1: 360

influenza or another respiratory infection. The medical profession is particularly interested in the incidence of the disease in human beings.

The respiratory apparatus is the usual portal of entry of the infection in human beings, cattle, sheep, dogs, rodents, and the crawling type of animal such as lizards. Following is a description of the course of the infection as it enters the lungs. Once the arthro-or-chlamydospores are inhaled they soon develop and grow into a spherule parasitic form, producing a pulmonary condition which is known as an acute benign respiratory disease and often also as a primary form of coccidiomycosis. In the majority of cases the infection is self-limited in the white race, but has a greater tendency among non-whites to develop in a systemic, progressive, disseminated, highly fatal disease. It is interesting that the primary infection takes places occasionally in skin abrasions. The initial stage of the infection becomes usually a self-limited process and seems to establish a permanent immunity. Often this is confused with seasonal respiratory ailments and appears as a sub-clinical entity. A primary infection may leave healed pulmonary lesions which are demonstrated by x-rays. They are in the form of glandular calcifications, cavitations, and nodular densities. The primary coccidoidal infections are accompanied often by skin manifestations such as erythema nodosum or erythema multiforme.

The metastatic disseminated form of coccidiomycosis is due to anergy of the animal body to focalize and wall-off the invaded organisms. The septicemic-blood stream invasion, resulting from a disseminated form, involves the entire body and the highly differentiated tissues, with no exceptions, become defenseless to the invader and a high mortality rate is reported. There is, of course, a definite affinity and a positive chemo-taxis, as with all other germs, to prefer particular organs. On the other hand certain organs are known to be more appetizing to the spores during the stage of invasion. The priority in selecting certain tissues may also be due not so much to their particular preference as

to the tissue faculties and the amount and presence of immunity. The septic disseminated stage of the disease usually occurrs sometime after the primary infection. It is believed that this condition is due to endogenous reinfection, through the vascular and lymphatic route. The metastatic form of the disease appears as a coccidoidal granuloma and the sites which are usually involved include meninges, skin, bones, joints, subcutaneous tissues, pericardium, lymph nodes, myocardium, kidneys, intestinal tract, uterus, fallopian tubes, and many other parts of the body. (Fig. 5) The results of the disseminated cases are lesions of typical granulomata, with similiar clinical and histological behavior of T.B. These granulomas are often confused and indistinguishable from those seen in T. B.; they have the same epitheloid and giant cell formation and usually are surrounded by lymphocytes. The only difference from T. B. is the demonstration of coccidoidal spherules within the center of these lesions. So far as immunity or skin sensitivity are concerned, positive skin tests usually develop in three to twenty-one days and the results are recorded in 24-48 hours. Its appearance is usually similiar to a delayed tuberculin like reaction. Once the sensitivity is established, the subject usually develops humoral evidence of contracted infection, which reveals the presence of anti-bodies and can be diagnosed through laboratory serological procedures, such as precipitin and complement fixation tests. The titre of the complement fixation depends upon the severity of the infection. Dilutions accepted as positive are 1:30 to 1:256 or higher. Precipitins develop earlier than complement fixation antibodies and are present often even in the primary stage of respiratory involvement. On the other hand, the complement fixation may never appear in the mild form of infection. Usually a falling titre indicates improvement or vice versa. Lesions like pulmonary cavitation, caused by C., frequently show a low titre and somehow this may be explainable because the fact that cavitation was established shows that the focalized infection, caused by C., was expulsed through expectoration or otherwise and, therefore, probably deprived itself of its content which serves as an antigen to produce the necessary amount of antibodies. The size of the cavitation itself may not represent the original stereoscopic image of the granuloma or the amount of destroyed tissues. I am inclined to believe that the extent of the cavitation is caused by a mechanical factor, such as the trapping of air. The precipitins which usually appear at the very early stage of the infection disappear sooner than does the complement fixation. In the disseminated cases, about 70% of skin tests are negative; however, when clinical evidence of C. dissemination is suspected, performance of the serological test should not be omitted since often antibodies were demonstrated in the body fluids in spite of negative skin tests. Another laboratory procedure of value is the sed rate and this was reported by practically all observers. The sed rate is elevated in the presence of disseminated cases and less frequently in pulmonary cavitation where it is found that 72% are normal and this follows the same pattern as complement fixation. A falling sed rate usually indicates improvement. Leuckocytosis can go up to 26,000 and higher and differentials show a great incidence of eosinophilia, which is usually from 10 to 30%, as reported by many investigators; however, cases of unusual percentage up to 95% were reported. As the infection subsides, lymphocytosis predominates the W.B.C. and it usually is interpreted as indicating the arrest or subsidence of the infection. Meningitis, caused by C. immitis, shows a predominance of lymphocytes and total pleocytosis rn from 50 to 2000 cells. Other procedures including the gold curve, Kahn, and Wasserman do not aid in the diagnosis.

Important endemic areas in Arizona are around Tucson and Phoenix. In a ten month survey on cattle, 511 cases of coccidiomycosis were observed in and around Phoenix. 503 infections were encountered in adult cattle and calves. Most of the lesions were restricted to the thoracic cage with lympo-adenopathies. Animals which were placed in the local feed lots contracted the infection. Those coming from open ranges, and destined for immediate slaughter, did not reveal, after inspection, any adenopathic evidence of coccidiomycosis. In one particular feed lot in Phoenix, about 25% of the herd presented C. lesions but no sheep or hogs were infested in the same location. Several dogs, in Arizona and Texas, were reported as being infested. A dog which spent two years in northern Canada and was mated with one of his species from California became ill shortly thereafter and was accidently killed a month later. An autopsy revealed that its central ner-

vous system was involved, containing spherules. The infection was also observed in a gorilla in the San Diego zoo. The animal died 45 days after the onset of the illness. An autopsy revealed granulomatous lesions with spherules involving the lungs, spleen, liver, and lymph nodes. The source of contamination was not exactly established but it was thought that some oat hay, which was used as bedding, may have been the vehicle. Oat hay grows in the vicinity of San Diego, California, and frequently contains soil particles. Occasional innoculation with C. immitis produced a localized infection at the traumatic site and the agent was found in regional lymph nodes; however, experimental intravenous injections of C. immitis in animals produced fatal results.

Autopsies performed in a number of hospital cases disclosed foci of pneumonic consolidation, similar to non-specific bacterial pneumonias. Often those focal areas were extensive, confluent, forming a consolidated gelatinous form. All these tissues had a characteristic microscopic appearance of wetness and hemorrhagic infiltration. Microscopically spherules with fibrin were numerous and polymorphonuclear leukocytes predominated. Necrosis was the outstanding feature found in pulmonary infiltration and it appeared in the intra-alveolar exudate and the surrounding pulmonary structures. It usually resembles early caseation in T. B. lesions. Frequently after some time, pulmonary infiltration becomes the predominating cause of ulcerative bronchitis and bronchiectatic dilation. The granulomatous focal lobular consolidation in the respiratory system usually resembles that of T. B. The involvement of organs in human bodies, as observed in 50 cases by Forbus, follows the following pattern: lungs, lymph nodes, spleen, skin, liver, kidneys, bones, meninges, adrenals, myocardium, brain pericardium, and pancreas. Peritonitis is rare and pericarditis is uncommon. Bone lesions are, as a rule, multiple and they are common in disseminated coccidiomycosis. (Fig. 6) The skeletal parts which become involved are the spine, pelvis, and extremities. In the long bones x-rays reveal lesions in both the metaphyseal and disphyseal segments. In the short bones the diaphysis is usually affected. Marginal erosions of bones are often accompanied by soft tissue abscesses which calcify in the latter stages. Periosteal destructive lesions resembling osteomyelitis appear in the hands and feet. Spina ventosa has often been reported as a complication of C. The non-whites are more susceptible to bone infiltrations, as stated previously. The syndrome of arthritis often occurrs in the primary form but erythema nodosum seems to accompany this phase of so-called desert rheumatism.

The symptoms and the diagnosis are of particular interest to the clinician. There are three forms of coccidiomycosis which can be clinically diagnosed:

1. The asymptomatic primary infection.
2. Symptomatic primary infection.
   a. Mild influenza-like respiratory disease.
   b. More severe pneumonia-like disease.
3. Progressive disseminated disease characterized by coccidiidal granulomas.

According to Dr. George E. Burch of Tulane University, the occurrence of asymptomatic infections is revealed by the fact that the positive skin reactors have no datable history of clinical disease, nor do the patients recall symptoms of any kind. According to his investigation about 60% of positive reactors appeared to have had unrecognized infections but others believe that 75% of the initial infections are subclinical with symptoms so mild that the cases

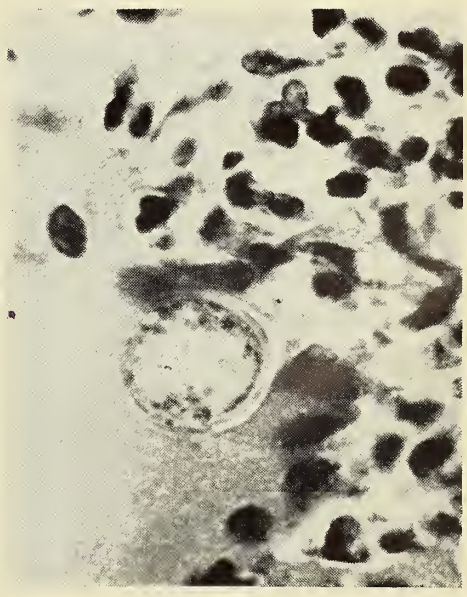


FIG. 6:
W. S., Male. Middle-aged. Dec. 1954. Still hospitalized. Disseminated Coccidioidomycosis. This micro-photograph of bone structure reveals a double walled spherule with its content of endospores in the bone tissue, almost in a phase of spilling its contents.
The reproduction of this lesion was obtained through the courtesy of Donald J. McNairy, M. D., Phoenix, Arizona.
Enlargement 1: 1800

are not diagnosed. Only about 25% developed illness of sfficient severity to be recognized clinically and will show roentgenographic changes within the lungs. The influenza-like primary respiratory infection is usually acute and presents a picture of fatigue, general malaise, and fairly constant pleural pain, fever, unproductive cough, and sometimes miminal hemoptysis. Chills are frequent and loss of weight in rather short periods of time is typical, in many cases as much as 30 pounds in a week. Often the patients have definite G. I. disturbances. A small number of cases develop erythema nodosum and it appears after onset of an acute form of the infection and is usually located in the shins, lateral surfaces of the thigs, knees, buttocks, arms, upper parts of the chest, and scalp. These skin manifestations are called in the San Joaquin Valley by the popular name of "bumps"; they do not fluctuate but are very tender and painful. In from 2 to 3 days these nodules turn purplish, fade, and brownish pigmentation remains after some time. Rarely does this erythema repeat itself spontaneously but it may be provocated and reappear with a skin test or with inhalation of the same antigen following dust storms. Often the appearance of erythema nodosum is accompanied by conjunctivitis and arthralgia. An increase of eosinophiles accompanies usually the skin manifestations. These eruptions are important symptoms and of diagnostic value and usually arouse the interest of the examining physician to suspect coccidiomycosis. During the erythematous period the skin tests are highly positive. Four hundred fifty three cases of erythema nodosum were tested and examined by Smith and it was found that 432 were positive, 11 were due to T. B., and 10 were undetermined. Skin eruptions are more prevelant in women than in men, despite the incidence of C. as a whole being four times greater in males. A reason for this high incidence in males is probably greater exposure. The non-white population seems to be less susceptible to skin manifestation but this is certainly questionable since it may not be visible because of their color.

The incidence of the disseminated form of C. is in the proportion of one to five hundred in the Caucasian type. There is, however, a much higher proportion in the colored population. This view is shared by many observers. The incidence among Mexicans of the disseminated form is about 3½ times as high as all other groups. The increase may be referred to the greater exposure of the poverty stricken average Mexican family and their inadequate primitive housing which exposes them to the soil. The Negro rate is about 14 times and the Filipino about 180 times as high when compared with the Caucausian type. The death rate follows the same racial and etnic pattern as the incidence and is correspondingly 5, 23, and 192. Confirming conclusions were obtained from other observers on a series of 710 white patients with the result of 8 disseminated cases and 4 from 34 non-white persons. There is no question that some racial susceptibility is obvious from all the evidence of reports presented. From a medical etno-geographic experience, it is known that the Filipinos were and are exposed to continuous exotic systemic infections and certainly it may have undermined their resistance and increased their susceptibility, explaining the high incidence and death rate.

Differential diagnostic difficulties which are encountered are the following diseases: T. B., Blasto-Actino-Aspergillo- and Moniliosis which are often confused with C. The history, clinical picture, skin tests, and all other laboratory procedures mentioned may help to establish the correct diagnosis. A consistent and striking difference from T. B. is the rarity of intestinal involvement in C., which we so often observe in T. B.; simultaneous infection of C. and T. B. have been reported.

An elevated temperature, which subsides slowly and becomes normal by the end of the second week, accompanies usually an acute respiratory infection. Following the pyretic phase there is a period of lassitude and fatigue, in any respiratory infection. (Fig. 4) Information of past contacts, location of onset of the contracted respiratory infection, and a skin test should always become an essential part of the routine physical examination. Data concerning the location of onset of infection, despite its great distance from endemic areas, should not exclude the possibility of C. until laboratory and other means of investigation are exhausted. Distances are no longer barriers of transmission of infection, with the transportation facilities of modern times.

The technique of C. immitis skin test is similiar to the Mantoux test, to be read in 36 to 48 hours. The skin test consists of injecting 0.1 c.c. of the material intradermally. Coccidoidin

is a preparation which consists of a 1:100 dilution of the filtrate obtained from a culture of 10 carefully selected strains of Coccidiodes immitis, grown in a synthetic media which is a modification of that recommended for the preparation of tuberculin by the Bureau of Animal Industry. Before commercial release of this preparation for medicinal use, it is tested for potency on human subjects known to be sensitive, and the reaction compared with standard material. False reactions associated with histoplasmin sensitivity are increased when a strong concentration is used. The C. preparation comes in a solution of 1:100 and 1:1000. A 1:10 concentration is available for patients who show C. pulmonary cavities and frequently have a negative reaction to 1:100 material. A positive reaction consists of induration measuring 0.5 cm. or more. (Fig. 7) Immediately after the intradermal injection, a wheal and pseudopodes may appear but this does not seem to be of diagnostic significance. As in all other acute forms of septicemia, the subjects may fail to show a positive reaction. The same occurrs often in miliary T. B. Persons with existing erythema should be tested with great precaution and with highly diluted solutions, otherwise we may aggrevate a



FIG. 7:

R. C. L., white male, 32 years old, one month in Arizona, exposed to desert dust.

Strongly positive coccidiomycosis skin test after 24 hours.

Reaction was violent with tendency to vescicualtion with severe edema of about one inch wide and 1½ inch long with erythema of about ¾ inches around it. The positive skin test coincided with elevated fever, pain in the chest and left hilar adenopathy, perspirations, weakness.

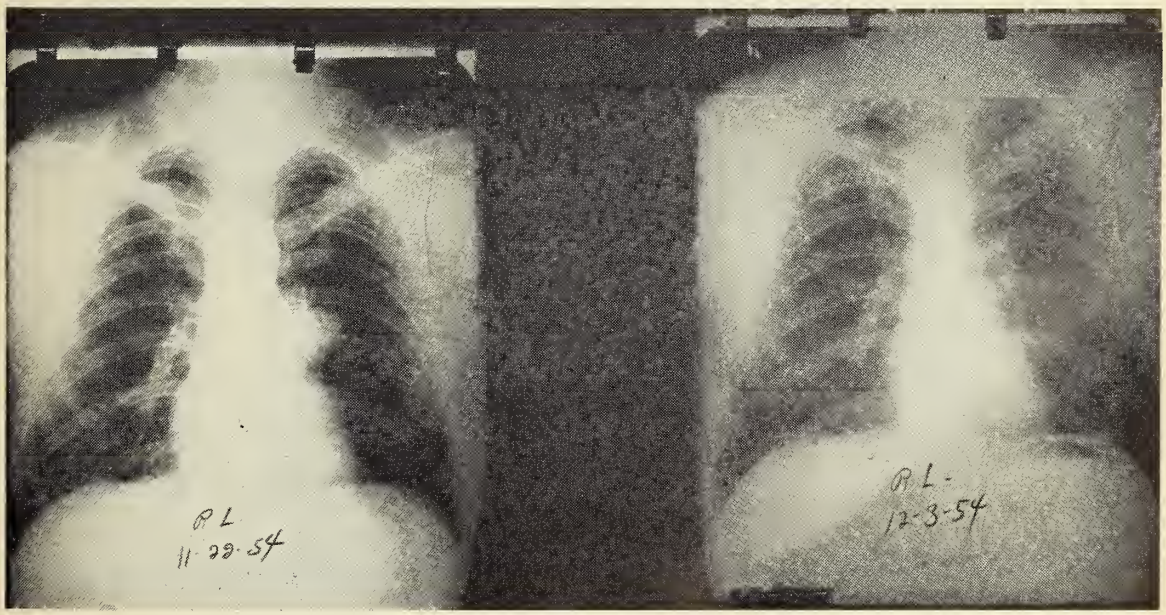


FIG. 4:

A. R. L., male, 32 years old, one month in Arizona.

Acute hilar type of coccidiomycosis pneumonitis. Well circumscribed enlargement in the left midlung field indicates hilar adenopathy, consisting of engorged mediastinal glands.

Symptoms present: Eelevated temperature, severe left chest pain, general malaise, profused perspiration, weakness. Laboratory examination revealed moderate leukocytosis, and strongly positive skin test persisting for 2 weeks.

B. Same case 12 days later:

Increased hilar density on the left is almost disappeared, consistent with resolution of pneumonitis. Skin test still strongly positive, Clinical symptoms of pain, fever, malaise and sweats almost disappeared.

condition and have sev re allergic systemic reactions. Sereological studies to demonstrate the presence of precipitins and complement fixation are of great value in the final diagnosis. Experience has shown that the serological tests are highly reliable.

The isolation of the agent (C. immitis) is not always necessary nor is it easy to demonstrate the specific factor. Body fluids, such as pus, sputum, and exudates, are usually the media where the cauative agent is found. The main x-ray findings are nodular; parenchymal lesions are usually situated in the mid-lung, less often in the lower lobes, and not too frequently in the apical and sub-clavicular regions. Cavities are frequent and, even when large, have a very thin wall. Bowman, Carter, and Jamieson, studying 35 such cases, found 11 were involving the upper ,15 the middle, and 9 the lower lung fields. In a similiar series of Smith's observations of cavities, 148 were in the upper and 64 in the lower part of the chest. The size of the cavities ranged from 1 to 8 cm. A feature which is of great importance in the diagnosis of cavitation is the absence of infiltration of surrounding tissues. Often the walls and the size of the cavity may be so fluctuant that ballooning due to air trapping was considered. (Fig. 8) Such cavitation may be present for many years with no discomfort for the patient and may rupture, collapse, or disappear by gradual shrinking. Many thoracic operations, such as lobectomies and localized resections, are being performed. Often repeated hemoptysis with the absence of other symptoms may make surgical removal necessary. The most conservative observers are of the opinion that the condition of the patient, even with cavitation, is good and that collapse can eventually be accomplished by conservative measures. There is, however, universal agreement that roentgen findings closely resemble T. B. In Jamieson's reports in a series of 21 cases, he noted persistent pneumonitis with extensive infiltrations of about ⅓ of the lung fields. The clinical course, even in the presence of such extensive infiltration, is often asymptomatic and the cavities are cyst-like and thin walled.

In an extensive study on Coccidiomycosis in Cattle of Arizona by Charles J. Prchal, in 1948, a topographic map of Arizona is presented, showing locations from which affected cattle were transported. The majority of infested animals originated from the immediate vicinity of

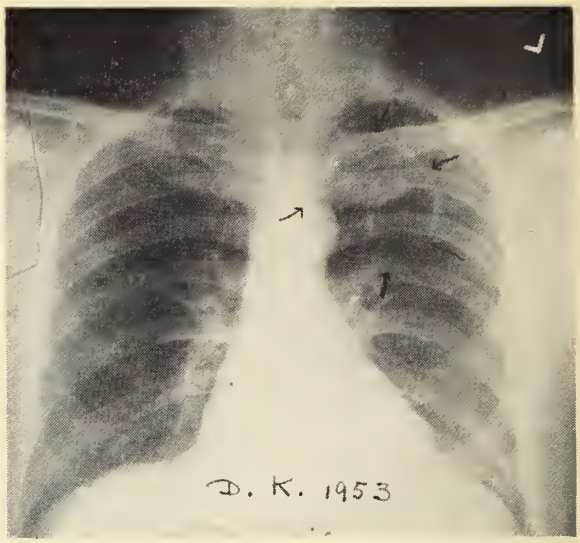


FIG. 8

D. K., White male, age 49. Large residual cavity upper left chest, close to left hilum. Note the thin wall. Size of cavity is probably maintained by sucking and trapping air, and is similar to a bubblegum-balloon with its transparent thin wall. Patient was admitted to the hospital in 1946 with the diagnosis of acute pneumonitis and possible lung abscess. In a period of a few days he developed several large cavities, containing exudate. Repeated sputum and culture examinations did not revealt T.B. Cultures however were positive for Friedlaender bacillus, and diagnosis was made of Friedlaender pneumonitis with cavitation. Studies through the years, repeated x-rays, the character of the thin walled cyst-like formation and the often applied skin test; and the greater knowledge and frequency of Coccidiomycosis and similar formation of cavities, indicates that patient probably had a severe form of coccidiopneumonitis with formation of cavities.

Phoenix, but it is not excluded that other areas may be equally contaminated. Few cattle are shipped from other sections of the state to Phoenix. The federal meat inspection service does not have jurisdiction over the entire state. Since clinical cases were reported from different parts of the state, it is logical to presume that the infection exists also among the animals. The author is of the opinion that the etiologic agent harbors in the soil and both human beings and animals are exposed to the same infestation through inhalation. The U. S. Army has extensive records of many positive skin tests, obtained during the war years in the arrid parts of the state. The greatest number of cases hospitalized, according to information published in the Military Surgeon Journal of November, 1946, are originally from the Southwest. The Indians on the Papago reservation are equally susceptible to C. The Arizona health department conducted an extensive x-ray survey throughout the state. Dr. Prchal is of the opinion, after re-

viewing the results, that it would be indeed interesting to know how many of the so called declared positive are due to C. or T. B. Serology certainly would differentiate many, but such extensive laboratory procedures on a state-wide basis would involve difficulties. The lesions in cattle, as noted by the same observer, were found extensively, well marked, and the usual involved location was the bronchial and mediastinal lymph nodes. Post-mortem inspection of those animals showed lesions in the retro-pharyngeal, mediastinal, mesenteric — lymph nodes. (Fig. 3) Other organs attacked by the disease were tongue, lung, liver, as well as other parts of the body. The Hereford breed seems to be more susceptible than the others. Intravenous and subcutaneous innoculations, with material recovered from specific lesions in cattle, produced a miliary fatal infection in guinea pigs, rabbits, and dogs. A postmortem survey made in 38, 195 animals, killed from October '46 to August, 1947, revealed the incidence of 503 cases. In offspring of the same breed, it was found that the proportion is much greater.

In a simultaneous survey of T. B. and C. and x-rays made among Phoenix grade school children by Dr. John Emmett, it was revealed that there was a high incidence of positive skin tests to C. immitis. The number of children observed was 1869 and the ages ranged from 5 to 17 years. There was no significant difference in sensitivity on the basis of sex or nationality; however, it was found to be greater with the increase of residence in Phoenix and vicinity. The dusty residential areas of the city revealed a higher incidence of snsitivity as compared to those living in paved areas. The same opinion and experience is shared by many other ob-

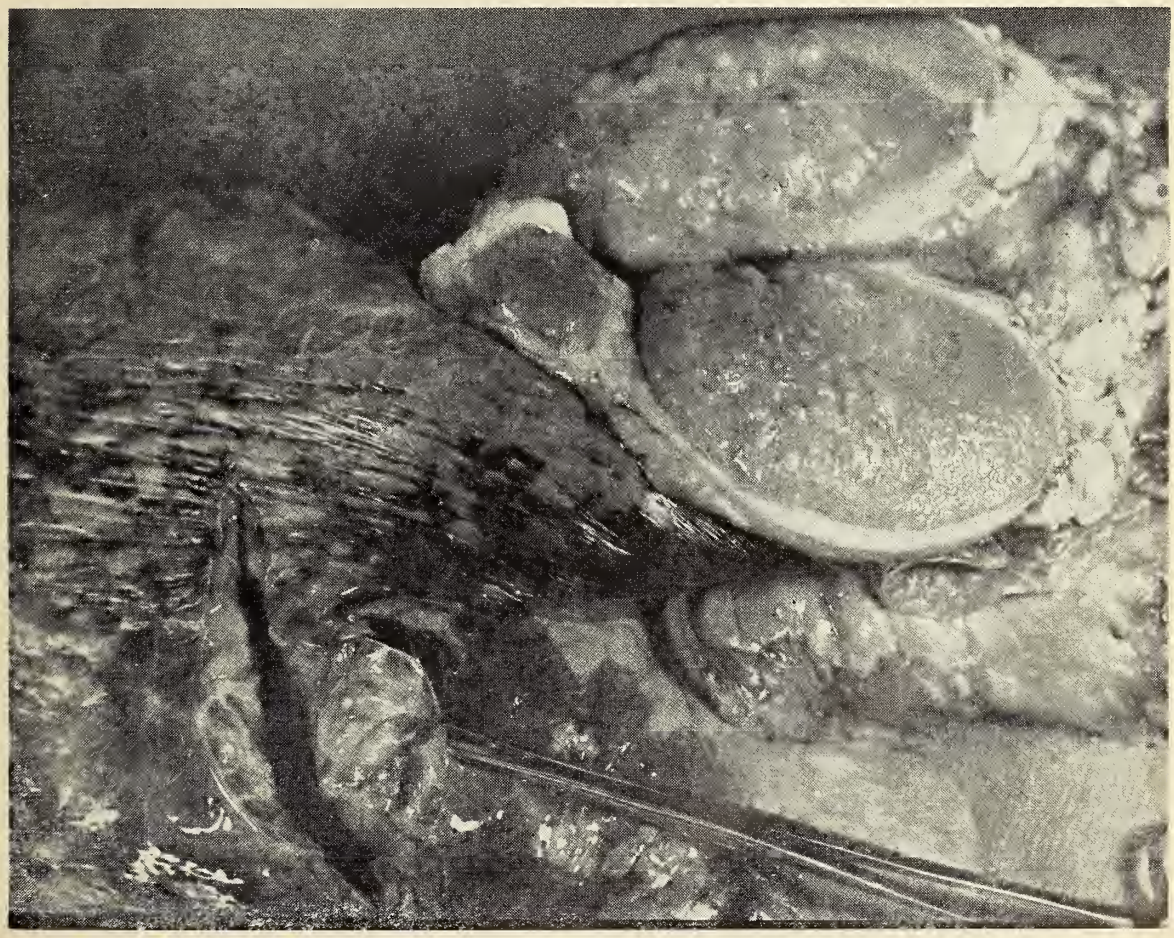


FIG. 3:
Mediastinal lymph gland and lung lesion from a cow. Animal was fattened in a Salt River Valley feed lot. Picture is about 1:1 reproduction. Primary lesion in area of tip of forceps.
This picture was obtained through the courtesy of H. Gilbert Crecelius, Ph.D.*, State Health Department, Phoenix, Arizona.
***Director of Laboratories.**

servers. C. E. Smith, in a lengthy report, confirms that the reduction of positivity was achieved by dust control.

It is often difficult to establish a clinical differential diagnosis from Blastomycosis and Hystoplasmosis, a respiratory infection caused by histoplasma capsulatum. Hysto-Blastomycosis resemble each other and are usually endemic in the eastern and central states, just west of the Mississippi. Occasionally it is possible to demonstrate the etiological agent of hystoplasmosis and the existance of cross skin sensitivity is to be considered. Of great aid in establishing the correct diagnosis is the information obtained from the geographical location, negative Mantoux, presence of pulmonary calcifications, and specific complement fixation. Actinomycosis is another acute respiratory infection to be excluded but the identification of Actinomyces bovis establishes the diagnosis.

Treatment and management. Rest appears to be the most important part of the treatment. As in T. B. there is no pharmacological preparation that can compete with absolute bed rest. Sed rates and complement fixation should be performed periodically to serve as a guide to indicate progression or regression of the disease. Blood transfusions, high protein diets fortified by vitamins, and mental rest will contribute to the improvement and focalize the infection, and eventually diminish the incidence of dissemination. Antibiotics should be used carefully, if at all, since they may encourage its growth. Secondary respiratory infections are more safely treated by one of the soluble sulfa drugs. Innumerable substances have been used in the treatment of Valley Fever with good results. Medications used consist of Arsphenamine, crystal violet, gentian violet, thymol, antimony, potassium tartrate, and iodine. Streptothricin seems to have an inhibiting effect on the growth of C. immitis in a concentration of 30 U. per c. c. media. Penicillin seems to stimulate rather than inhibit the fungus. Streptomycin does not inhibit the growth of the fungus. Plumbagin, in 1:50,000, and bacillomycin, in 0.005 mgms. per c. c. of media, appears to have a fungistatic effect. Surgical procedures are performed on bone lesions and skin growths. Pulmonary collapse, resections, and lobectomies are indicated in severe uncontrolled hemorrhages caused by cavitation and granulomas. Actidione has been used clinically without steady favorable results but there is indication that it may be of value in selected cases. This antibiotic was used in the disseminated form of meningitis but the lack of permeability of the meningeal coverings of the central nervous system may be responsible for its failure. Actidione has been shown to have fungistatic properties in vitro. My latest experience in a number of cases treated with Immune Globulin seems to be favorable. This recent clinical observation, however, needs further confirmation.

Summary. The incidence of C., caused by C. immitis, was studied. The endemic areas were cited and it was established that the agent harbors in the soil and dust and is transmitted by inhalation and by direct contacts. The vegetative phase of the fungus in the soil and laboratory cultures are highly contagious. Main portal of entry is the respiratory system and the incidence is directly proportional to the number of dust controlled areas. The etiologic agent is not transmitted from man to man in the parasitic form, as it establishes itself as a disease entity in the animal body. Aspirated mycelia and immediate infestation of the environment through cough is an infectious hazard and this is probably erroneously interpreted as being transmissable from person to person. Skin tests are performed by a properly diluted solution and readings are similiar to tuberculin. Precipitins and complement fixation are a part of the diagnostic armamentarium in the differential diagnosis. Cross sensitivities to hystoplasmosis, actinomycosis, blastomycosis, and other fungi infestations were considered. Anergic phenomena, similiar to tuberculin, were reported. Animals and wild rodents affected in the infested areas may cause epidemics in new endemic areas. Pulmonary cavitation results frequently. These cavities are thin walled with no surrounding infiltration in contrast to T. B.

Surveys were made on a large scale in Phoenix grade schools and the incidence is in direct proportion to the dust areas. The disseminated form is highly increased in the non-white population. The native and intermarried racial groups, in the Phillipine Islands and Mexico, are more susceptible. Recommendation was made to include skin tests in the examination of all respiratory infections. Available treatment, consisting of bed rest, medication, general care, and surgical procedures, was described.

Acknowledgments. Grateful acknowledgment is made to Leslie B. Smith, M.D., D. W. Melick, M.D., C. Thomas Read, M.D., and S. S. Scholpp, M.D., for their courtesy of providing me with several films and case histories of their personal cases from the Phoenix area.

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DISCUSSION:

By Leslie B. Smith, M.D.

Given at Memorial Hospital on Coccidiomycosis

Until 1936, we as doctors were not alerted or aware of the existence of this disease and its present prevalence. Actually, it was not until during World War II that we became conscious of its existence and its incidence in this particular area. It was Dr. Smith from California, whose extensive research work brought this disease to our attention, and I am sure that there are several in the audience here tonight who had th privilege of working with Dr. Smith during his investigation of Coccidiomycosis in Arizona and California during the 1940's. It has already been mentioned this evening by Dr. Reichert, that this disease may simulate tuberculosis. I am reminded of a case which I saw back in 1938. This was a young, married woman in whom the x-ray's disclosed a very clean cut cavity in the right middle lobe. I tested her with everything which we knew at that time, trying to determine whether or not it was tuberculosis. She continued to hemorrhage from the cavity without proof of it being tuberculosis. It was the general, accepted, medical practice at that time, that any lesion in the lungs, particularly cavity lesion was tuberculosis, even though we were unable to definitely prove it by having positive sputum. I would like to reemphasize the fact that many cases of pulmonary lesions were treated as tuberculosis in this area without definte proof, hence, I am sure that there are numbers of people walking the streets of Phoenix today, who have been given extensive treatment for tuberculosis, including pnemothorax for many years, when actually, had we known about Coccidiomycosis in those years, they would not have been subjected to the long, gruelling treatment which they received for probable tuberculosis. The young girl which I just mentioned above hence, was thought by me, to have tuberculosis and she was so told. I advised her to have pneumothorax but she refused to do so. I was so insistent that she take this form of treatment, that I told her that she would have to find herself another doctor unless she complied with the treatment I thought was best, and that was pneumothorax. About eight months subsequent to her last visit

to my office, she came in to inquire about the health of her husband. I persuaded her to let me fluoroscope her and have an x-ray made, and lo and behold, much to my surprise and chagrin, the cavity was completely gone and there was no residual disease in her lungs. Undoubtedly, this case mentioned was a case of unrecognized Coccidiomycosis and had she not been obstinate and refused to have "proper treatment" she would have gone through the long tedious task of trying to cure her disease with pneumothorax.

The early works on Coccidiomycosis had led us to believe that the disseminated form was invariably fatal, and it has not been until the last few years, that we have come to realize that only about 40% of white people who have the disseminated cocci actually die.

One of the cases presented by Dr. Reichert here this evening, was that of a truck driver who had disseminated coccidiomycosis. He was first thought to have Hodgkin's disease because of the mass of glands in his neck and the large gland which showed up in the hilum and mediastinum. However, a biopsy revealed that he had coccidiomycosis. At that time we were still under the impression that disseminated cocci was almost invariably fatal, hence, I told his family that nothing short of a miracle could save his life and that he was undoubtedly going to die. But, much to my surprise and the benefit of the patient, he is living and well today, without any residual evidence of the disease. The negro, however, is still very prone to die of the disseminated form of the disease. I am sure that all of us present here tonight, wish to thank Dr. Reichert for bringing this disease in its entirety by this symposium, to our attention, because it is something we all see in Phoenix every few days. In fact, it is so common here that we do not even go to the trouble of trying to prove its existence, but accept it on its clinical presenting symptoms. Again, I think we should thank Dr. Reichert for this very scholarly presentation.

By Howard M. Purcell Jr., M.D.

Coccidiomycosis in children may present either a mild self-limited pulmonary disease or a severe disseminated disease frequently ending fatally.

In an endemic area such as Arizona, the majority of local residents acquire coccidiomycosis infection as children; therefore "valley fever" or "summer flu" is familiar to pediatricians. It is my impression that the mild cases produce less general symptoms (fever, lassitude, etc.) in children than in adults. However, erythema multiforme is a more common occurrence in children and it's presence, particularly during the dusty months, always suggests coccidiomycosis to the pediatrician. A roentgenogram of the chest may reveal a parenchymal density, often in a "maple leaf" configuration. The intradermal test may be faintly positive by the time the infection is discovered, or it may not be positive until the test is repeated after several weeks have elapsed.

Therapy for the less severe cases is "supportive" and non-specific. My only suggestion is the administration of salicylates in dosage comparable to that given for the collagenous diseases (gr. i per lb. per 24 hrs.). This treatment usually results in a lowering of a fever if present, decreased malaise, and probably a shortened duration of the erythema multiforme if present.

In children, the fatal cases of coccidiomycosis are usually associated with meningitis. The clinical and spinal fluid findings are indistinguishable from those found with tuberculous meningitis, and only a positive culture for tuberculosis can reveal the true diagnosis before autopsy.

Contrary to the general impression, a large proportion of cases of disseminated coccidiomycosis recover. A report from the Kern County General Hospital(1) stated that in 21 cases of disseminated coccidiomycosis involving one or more bones, 19 recovered; the lesions healed spontaneously. One of the youngest patients to be reported was a 2 week old infant who was born during a dust storm. Pulmonary involvement was found at age 2 weeks, and at one month of age there was a bone lesion. This child recovered.

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DOG BITE AND ITS COMPLICATIONS

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THE treatment of dog bite or other potentially rabid animals, the use of rabies vaccine, rabies vaccine reaction and the treatment of this reaction are subjects which need clarification, particularly as to physician responsibility. Recently there has been much newspaper publicity on this subject. In the middle west a physician failed to give the rabies vaccine. The patient acquired rabies and died. Here in the west a physician gave the injections at the parents insistence. A vaccine reaction of an encephalitic type developed. Following a critical illness the patient recovered. In the first instance there was implied criticism in the newspaper for not giving the vaccine. In the latter instance there was implied criticism for having given the vaccine. These cases serve to emphasize the need for careful delineation of the physicians responsibility under all circumstances relating to the bite of a possibly rabid animal.

Alexander et al suggest that the dog bite be washed with tincture of green soap for five minutes and then it should be treated as any similar wound from a non bite source (debridement, suturing, etc.) the use of tetanus antitoxin is also recommended.

Blatt and Lepper(2) advocate the use of rabies vaccine in all bites about the neck and face. They suggest the full series of twenty-one injections under these conditions whether or not the dog is available. In bites on the trunk or extremities they give the fourteen (14) injections if the dog is not available. They report 2, 193 persons immunized with an all over reaction rate of 0.7 percent and .3 percent central nervous system type reactions. Alexander(1) et al state that in bites about the neck, face and hands they give one or two injections of vaccine then observe the dog and continue the treatment only if the animal becomes rabid or runs away. They feel this is safe even in severe bites if combined with the new anti-rabies immune globulin recently developed by Kaprowski(3) and his co-workers at Lederle Laboratories. (This is a horse serum which produces an immediate rise in titer. It may be used in addition to the regular rabies vaccine but in its present status not to replace it.) Under these circumstances the number of reactions to the vaccine is decreased many fold because as has been shown by Applebaum, Greenberg and Nelson(4) that reactions to the vaccine occurred five times more frequently in those receiving fourteen injections than in those receiving seven injections or less.

Lattimer, Webster and Gurdjian(5) report two cases of rabies vaccine reaction one of which expired and point up the fact that both had had previous rabies vaccine treatment. They report the brain pathology in the encephalitic type to consist of an adventitial infiltration of the cerebral vessels with round cells, a perivascular microglia reaction and infiltration of the Vagus nerve with segmented granulocytes. Alexander(1) et al feels the path of the virus is along the nerve paths to the central nervous system and back along the nerve paths to the salivary glands.

The cases reported above bring to light the possibility of the reaction being of an allergic nature. This is pin-pointed by Horack(6) who points out that by history practically every patient who has a rabies vaccine reaction is allergic. He quotes Swenther and Rivers in the Journal of Experimental Medicine in which they state that "brain tissue may function as a complete antigen capable of exciting the development of complement fixing antibodies which are organ rather than specie specific. This would point up the probability that the encephalomyelitis that follows rabies vaccinations is associated with development of specific antibodies for brain tissue." Pickar and Kramer(7) report a case of rabies vaccine reaction of the encephalitic type with a response to benedryl; a relapse on cessation of the drug and spectacular response to restarting of pyribenzamine. Blatt and Lepper(2) state that sixty percent of all patients receiving the vaccine develop a positive skin test and all patients developing a reaction develop a positive skin test. The test is done by diluting the vaccine 1:10 with saline and injecting 1/10 cc intracutaneously as in the tuberculin test. It is read in 24 hours. These same authors and Garrison(8) and many others report good results with the use of cortisone in rabies vaccine reactions. It would seem that it might be feasible to give the vaccine in con-

junction with cortisone but Alexander(1) et al believe that this would suppress the value of the vaccine. No opinion can be found relating to the use of antihistamines under similar circumstances.

Horach(6) states that in his series the reaction rates was one in 1200 or 0.083%. He outlines the types of reactions viz:

1. Delayed reactions of the tuberculin type.
2. Generalized urticaria.
3. Combines 1 and 2 plus constitutional symptoms with, headache, fever, etc.
4. Peripheral neuritic type.
5. Dorsal lumbar myelitis occurring in the 2nd or 3rd week of treatment.
6. Landry type ascending paralysis.
7. The encephalomyclitic type with hypertension, coma and choked disc. The latter two types are the most serious and one must watch them closely as one watches bulbar polio. The same type of treatment including a respirator and tracheotomy may become necessary. In all instances where a reaction seems imminent the treatment should be stopped if this is in keeping with good medical treatment, but if it must be continued Horach(6) suggests and outlines a course of desensitization.

A recent medical article for lay consumption depicts the use of the rabies vaccine as something horrible and compares it in severity to the actual disease. Appelbaum, Greenberg and Nelson(4) in their series state that 699 rabid animals were picked up in New York during the period covered by this survey. They bit 707 persons. All but eight took treatment. Six cases of rabies developed during this period only two had received anti rabies vaccine. Since rabies develops in 10% of all persons bitten by rabid animals 70 cases would have developed all of which would have been fatal. Treatment saved these lives. All of the forty-one cases that had rabies vaccine reactions of the central nervous system type recovered. The value of the judicious use of the vaccine immediately becomes obvious.

The case which precipitated this review of the literature and publishing of this report was first seen by us on June 2, 1954. The child a white male age 13 had been bitten by a dog two weeks prior. He was given a course of rabies vaccine at the parents insistance and at the 10th injection began to complain of slight headache. At the 11th injection he developed a fever and projectile vomiting and the following day went into a coma. He was seen by us at this point. The temperature was 103°F. The patient was stuporous and failed to respond. He had a stiff neck, back and marked hamstring spasm. There was a left facial paralysis and paralysis of his bladder. His blood pressure was 180/100 and he had a two plus choking of optic discs.

Treatment consisted of the use of I. M. benadryl and cortisone plus symptomatic treatment such as fluids for hydration, suction for mucus, the usual measures for fever, and hypertonic solutions for his hypertention. At the end of the third day of treatment under this regime the fever dropped, the blood pressure came down, the mucus lessened and he was able to take food and fluids. He went on to an uneventful recovery regaining all his functions completely.

SUMMARY & CONCLUSIONS

1. Dog bites (or other animal bites) should be washed for five minutes with tincture of green soap and are then treated as the wound demands.

2. Bites about the neck, face or hands should be treated immediately. Five injections may be given and the dog observed. If the dog does not develop rabies or run away the vaccine may be discontinued. If the animal develops rabies 21 injections are given. (Total)

3. Severe bites of face, neck and hands should be treated as above using immune gamma globulin for rabies in addition.

4. Bites of the trunk and extremities should be treated only if the dog is not available for observation or if the observed animal becomes rabid. Fourteen injections are required for a complete course .

5. All dog bites should receive a tetanus booster.

6. Should any type of reaction occur the injections should be stopped. If this is not in keeping with good medical care desensitization should be done after Horach(6).

7. All patients with an allergic history should be watched particularly, and all patients previously treated with rabies vaccine should be skin tested for sensitivity as outlined in the text of this article.

8. The various types of reactions are described. The ascending Landry type and the

encephalomyelitic type are pinpointed as the serious types requiring close observation and a type of care akin to that given bulbar polio.

9. The use of anti histamines and cortisone is stressed as giving particularly good results in the serious type of reactions.

10. It is shown that contrary to some lay opinions and judicious use of rabies vaccine is good treatment. One must keep in mind that rabies is 100% fatal.

11. A case of rabies vaccine reaction of the encephalomyelitic type is reported which was successfully treated with anti histamines, cortisone and symptomatic treatment.

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MALIGNANT MELANOMA OF THE GALLBLADDER

Report of a case and review of the literature

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FOUR cases of malignant melanoma of the gallbladder have been reported in the literature to date. We wish to add a fifth case of melanoma in this unusual site.

Wieting and Hamdi(1), in 1907, described a primary melano-carcinoma of the gallbladder with metastases to the omentum, pelvic connective tissue and verebrae. In 1931, Rosenthal(2) presented a primary malignant melanoma of the gallbladder with metastases to the brain, lungs, jejunum and kidney. Pautler and Gallavan(3), in 1951, reported melanomatous tumors found simultaneously at autopsy in gallbladder and brain and concluded that the primary source was in the meninges. Later in 1951, Madonick and Savitsky(4), in discussing the occurrence of hemorrhage in cerebral melanomas, described a case which showed a collection of melanin pigment in the gallbladder at surgery. The patient subsequently developed cerebral symptoms and melanin was found in the spinal fluid. No autopsy was performed on this case. Our patient, like that of Madonick and Savitsky, was subjected to cholecystectomy and subsequently died of melanomatous cerebral involvement.

Case Report

L. S., a 69-year-old white woman, was hospitalized on 10-14-52 because of acute upper abdominal distress, occipital headache, nausea and vomiting. This attack was superimposed upon a long history of indigestion, heart burn, bloating and intolerance to fatty foods. Ten days prior to this last admission, she had been hospitalized for similar symptoms and at that time had numerous x-ray studies. Gallbladder x-rays were negative. A gastrointestinal series showed hyperactivity of the stomach and duodenum with a small, spastic, tender duodenal cap. A barium enema revealed numerous diverticuli along the lower descending colon and sigmoid. Chest x-rays disclosed a number of circular densities in both lung fields with a rather large lobulated density in the right perihilar region.

Physical examination on 10-14-52 revealed possible slight papilladema bilaterally and mild tenderness across the upper abdomen. Otherwise the examination was negative. A repeat chest x-ray showed no change in the previously mentioned nodular densities which were considered highly suspicious of metastatic malignancy. Laboratory findings were: negative urine, a CBC of 3.9 million rbc., 13.0 gm. hemoglobin, 11,400 wbc with 75% polys, 22% lymps, 3% eosinophils and 6% non-filaments; no occult blood in stools.

Despite the chest x-ray findings, an explanatory laparotomy was done on 10-15-54 because of the patient's intractable vomiting and because of the insistence of the patient's relatives. A papillomatous mass was found within the gallbladder and a cholecystectomy was done. In addition to the gallbladder findings, a paraesophageal hernia, measuring four cm. in diameter, was found to extend about six cm. into the chest. Otherwise, the abdominal contents were completely negative. The patient did fairly well for

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the first 12 hours, then suddenly became comatose. Her temperature rose to 102 degrees and her blood pressure, which preoperatively had been 160/85, climbed to 225/80. She expired on the following morning, about 24 hours after surgery.

Surgical and autopsy findings:

The gallbladder submitted to the laboratory measured seven x three cm. unopened. Upon opening the gallbladder it was found to have a papillomatous hemorrhagic growth, firm in consistency, but apparently infarcted. The wall in this area was slightly thickened and the serosal surface was puckered. The gallbladder otherwise was not remarkable. There were no stones found.

Microscopically the growth (Fig 1) was composed of varying-sized cells with somewhat hyperchromatic nuclei, some with prominent nucleoli and slightly basophilic abundant cytoplasm. They were epithelioid in character and contained a brownish-colored pigment. There were also many macrophages in the connective tissue containing a brownish-colored pigment which was negative for iron. A diagnosis of malignant melanoma of the gallbladder was made.

The autopsy findings consisted chiefly of metastatic nodules throughout the lungs and both adrenals. The nodules were dark in color and fairly friable. There was considerable congestion in the lungs present. Both the adrenals were enlarged and on sectioning there was found replacement of the medullary order of the adrenal by neoplastic tissue which was brownish in color. There was some extension of the growth into the cortical portion of the adrenal.

On opening the cranial cavity some edema was present. There was some flattening of the left side of the brain from pressure. A firm, irregular mass in the left temporoparietal region merged with dura. The leptomeninges likewise were adherent to the tumor but no infiltration into the lung was seen grossly. The mass measuring five x four cm. was not encapsulated and on sectioning had a firm grayish appearance with multiple areas of deep brown pigmentation.

Microscopically the growth (Fig. 2) was similar in all its metastases to that found in the surgically removed gallbladder. The nuclei were relatively large and epithelioid in character and had a slightly basophilic cytoplasm. Mitotic figures were present but not numerous. In some

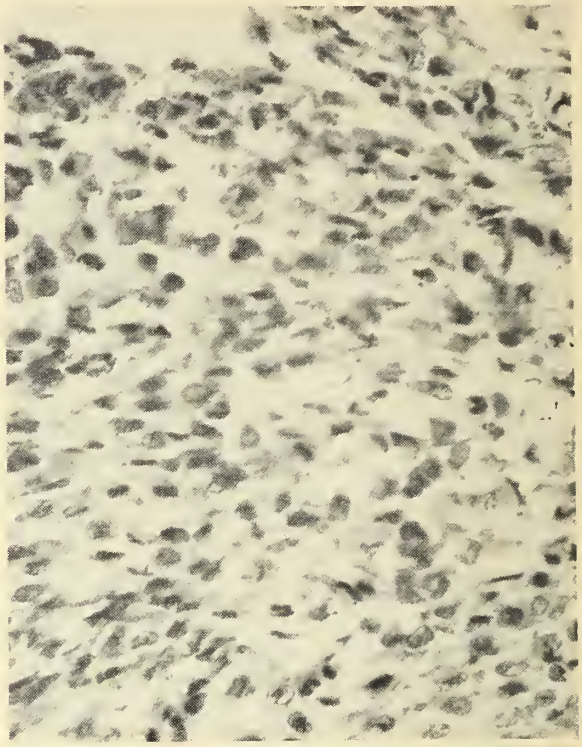


Fig. 1—Section (x3000) of gall bladder tumor showing varying-sized cells with hyperchromatic nuclei and prominent nucleoli.

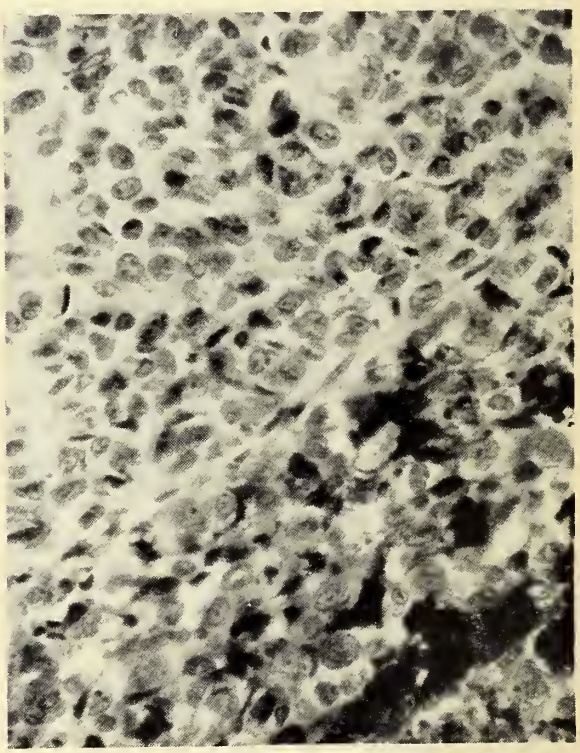


Fig. 2—Section of meningeal tumor (x3000) revealing cells with large nuclei and an occasional mitotic figure.

areas the tumor cells were flattened and had a somewhat fibrous appearance rather than the epithelioid character of the tumor found in the gallbladder. In the brain there was no invasion of the cerebral cortex.

Discussion

This patient had multiple foci of malignant melanoma involving gallbladder, adrenals, lungs and meninges. A survey of the skin at autopsy revealed no primary source of the tumor. Fundoscopic examination had been negative for evidence of tumor and the patient had complained of no eye symptoms. We were unable to elicit from the patient's relatives a history of any previous removal of a skin lesion.

Although it seems unusual to have gallbladder metastasis without coincident lymph node or liver involvement, we feel that the gallbladder tumor was metastatic rather than the primary source. Wieting and Hamdi and Rosenthal postulated squamous cell metaphasia in the gallbladder and thus gave an epithelial origin to their cases. However, we would prefer to adhere to the more widely accepted neurogenic theory of origin of melanoma. This latter theory was first suggested by Von Recklinghausen in 1882 and more recently has been supported by Ewing(5). Ewing states that the two most likely sources are (1) from nerve cells of the sensory end-organs (Meissner's corpuscles) as shown by Masson or (2) from a specific mesoblastic cell, the chromatophore. This cell was thought by Ribbert to originate very early in the embryo and to not be related to any other cell type. For rare melanomas of the internal organs, Ewing believes the most reasonable assumption is an origin from chromatophores in deep nerve structures.

A review of the literature reveals that next to skin, the meninges are the most common source of melanoma. Foot and Zeck have demonstrated nerve endings in the meninges similar to the Wagner-Meissner corpuscles. Also chromatophores have been found along the vessels of the pia and even in the brain tissue. So, with this in mind, we would select the meninges in our case as the most likely source of the malignancy. Three of the four previously reported cases of melanoma of the gallbladder had additional meningeal involvement. Wieting and Hamdi make no mention of nervous system involvement but do describe vertebral metastases. Nowhere else in the literature could we find mention of bone metastasis. In fact, on several occasions, including Shapiro and Kellert(6), we found statements to the effect that when bony involvement occurs it is only through direct extension. We wonder, therefore, if Wieting and Hamdi's case did not have a neurogenic origin in the spinal cord. Russi, Robinson and Nagler(7) in their report of two cases of melanoma of the meninges, state that "melanin-bearing cells are normally found in the meninges over the spinal cord and in the recesses and sulci of the brain and cerebellum." If the case of Wieting and Hamdi did originate in the meninges of the spinal cord, then all five cases of malignant melanoma of the gallbladder could have been metastatic from a common source. We think that this is very probable because of the frequency of primary meningeal melanoma.

However, we must at least consider the adrenal as a possible site of origin. Maximow and Bloom(8) mention no nerve endings nor chromatophores in the gallbladder but do describe chromatorphores in relation to the adrenals. Knisely and Baggenstoss(9), in 1946, reported a case of primary malignant melanoma of the adrenal and found eleven similar cases in their review of the literature. Autopsy showed their patient to have a large melanoma of the left adrenal with local lymph node involvement and distant metastases to the right adrenal, periureteral region and vertbrae, lungs, prostate and liver.

In 1947, Strong(10) reported a case of melanoma of the cerebellar meninges with amelanotic spread to the right adrenal, stomach, lymph nodes and skin. Madonick and Savitsky(4) include a case with widespread metastases including involvement of the right adrenal. Knisely and Baggenstoss discuss the various possibilities of histogenesis of the adrenal tumor and conclude that "the precise cell of origin in cases of cancerous melanoma of the adrenal gland is still in doubt." Ewing (5) also presents the various theories of derivation from adrenal cortex cells, pigmented ganglion cells of the medulla and wandering chromatophores in the connective tissue about the adrenal. Ewing would favor either the nerve cells or chromatophores.

Summary

A case of malignant melanoma involving gallbladder, meninges, adrenal and lungs is reported. From a review of the literature, the authors con-

clude that the primary site was probably in the meninges, although an adrenal origin cannot be ruled out.

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A MEDICAL SCHOOL FOR ARIZONA?

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INTRODUCTION

IF we understand immediately that a medical school does not mean one separate and distinct building, but a group of buildings with interrelated activities, then we have a basis for understanding and deliberation.

POPULATION & FINANCIAL OBLIGATION

There are some individuals who would have the state of Arizona establish a medical school immediately. These individuals evidently presume that the legislature would look with favor on such a project. Even if we conceded that Arizona was ready for a medical school, would not this first hurdle of convincing the legislature be a morst formidable one?

Let me relate to you the requirements for a medical school, and you determine whether or not we are ready for it. In the first place, consider population. Doctor H. G. Weiskotton of Syracuse, New York, who knows more about these requirements than anyone else, wrote me to the effect that a medical school should not be undertaken unless there is a surrounding population of two million people to support such an endeavor. Arizona does not have such a population. We as yet cannot boast even one-half that population. One might ask when Arizona may be expected to have such a population. The concensus of opinion indicates that Arizona may have a population of two million by 1980. It is true there are three Western states who have medical schools, and in each of these states the population is less than two million. For instance, Utah has a population of 688,000, Oregon 1,521,000 and Colorado 1,325,000. From this you might conclude that a population of two million is not an absolute essential. It may not be an essential, but we should also inquire if these states are suffering a financial burden as a result of their medical schools. In order to find this out, I wrote to the governors of Utah and Oregon. Governor Bracken Lee of Utah answered: "The people of the state of Utah devote a higher percentage of their personal income for the support of higher education than the people in any other state in the union. A part of this high expenditure can be attributed to the fact that we are supporting a medical school, but it derives chiefly from the fact that we have seven state-supported institutions of higher learning, and only three privately supported. The national ratio is two private institutions for each public institution; so you can see we begin at quite a disadvantage." Governor Patterson of Oregon answered: "We feel that Oregon is supporting its medical school without an undue financial burden on the state and the level of support has been sufficient to maintain a high quality program. It seems questionable whether population alone should be the basis for determining whether or not a state can support a medical school for there are other factors which must influence this decision."

Probably the most important determining factor has to do with the wealth of a state. We must concern ourselves with how much capital outlay is necessary in order to build a medical school. After we have the medical school as a physical reality, how much will it cost to maintain it? Sixteen million dollars ($16,000,000) is a fair estimate as to the cost of building a medical school. Thereafter, it will cost one million five hundred thousand dollars ($1,500,000) per year to maintain it. This can be supported by giving you an example from one of the schools previously mentioned. The University of Oregon has a physical plant that represents an investment of fourteen million dollars ($14,000,000). This includes a new teach-

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ing hospital at a cost of six million five hundred thousand dollars ($6,500,000). The operating budget for the year 1953-1954 is one million three hundred thousand dollars ($1,300,000). This amount is for the medical school proper. When the outpatient clinic and the university hospital are included, the operating budget becomes two million dollars ($2,000,000) a year. If an established medical school in this area is known to cost fourteen million dollars ($14,000,000), and must expend two million dollars ($2,000,000) to maintain it per year, it is probable that a similar school in the state of Arizona would not cost less. Doctor John Z. Bowers, Dean of the University of Utah School of Medicine was asked to comment on this problem, and his reply follows:

"A real problem for any new medical school relates to the procurement of faculty. It is fair to say that in these days qualified medical scientists who are interested in academic careers are not numerous in most fields. Decisions on positions are made with consideration of possible salary, availability of outstanding facilities and opportunities for association with other leading medical scientists. A number of state medical schools and private schools are finding faculty problems really tough — particularly in Anatomy, Physiology, Pathology, Radiology and Psychiatry.

"I have real reservations about the value of a two-year medical school. As you are aware, the general pattern in the country is to convert two-year schools to four-year schools — examples are North Carolina, Missouri and Mississippi. It is difficult to get a competent faculty at a two-year school and medical education is something that is no longer segmented into preclinical and clinical areas. It is essential that a heavy dose of clinical medicine and clinical attitude be adopted for the first two years.

"Personally, I feel that with the development of the Western Interstate Commission for Higher Education, there will be ample opportunities for medical education for qualified students from your state. Thus, the expenditures for a medical school would hardly seem justified."

Let us go one step further, however, and try to project into the future the most desirable time to start planning for such a school. Let us presume that Arizona reaches a population of 1,500,000 by 1970. Let us also presume that by 1970 Arizona can afford $16,000,000 for a physical plant, and $1,500,000 yearly to maintain it. Such being the case, a bill must be introduced in the legislature so state funds can be used to finance this project. It might be possible for the legislature to enact such a bill no later than 1975. It will thereafter take three years to construct the physical plant. Certainly it will take that long to select the faculty. The medical school might be ready for its freshman class in September of 1978. If our previous thought about the population of Arizona reaching two million by 1980 still holds true, then the opening of the medical school in 1978 would approximate all of the necessary requirements for a successful school.

HELP FOR THE MEDICAL STUDENT AT THE PRESENT TIME

If a medical school for Arizona must of necessity be postponed, what alternative do we have to offer now? My purpose in these opening remarks has been to set the stage so I can call to your attention present efforts to do something about medical, dental, and veterinary education. My remarks will be directed to medical education primarily. These remarks are equally applicable to dental and veterinary education. The state of Arizona recognizes an obligation to a certain group of students who cannot obtain the training they desire at home. The Western Interstate Commission for Higher Education is therefore helping these students realize their ambition. This commission has no program to "sell". The commission came into being to provide a device through which the states can do planning and undertake action in the field of higher education, in the important years ahead. The purposes of the commission are clearly stated in Article I of the Western Interstate Compact for Higher Education.

> WHEREAS, the future of this nation and of the Western States is dependent upon the ability of the education of its youth; and WHEREAS, many of the Western States do not individually have enough numbers of potential students to warrant the establishment and maintenance within their borders of adequate facilities in all the essential fields of technical, professional, and graduate training, nor do all the states have the financial ability to furnish within their borders institutions capable of pro-

viding acceptable standards of training in all fields mentioned above; and

WHEREAS, it is believed that the Western States, or groups of such states within the region cooperatively can provide acceptable and efficient educational facilities to meet the needs of the region and of the students thereof; now

THEREFORE, the state and territories do hereby covenant and agree to carry out the aims of this compact.

This compact is now in operation, Arizona, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, and Wyoming. The remaining states and teritories, California, Washington, Nevada, Alaska and Hawaii, have not taken action on the compact as yet.

A specific example of the compact in action is as follows: Arizona is sending some of its medical students to the University of Colorado. The tuition for a Colorado resident is six hundred fifty-five dollars ($655.00). The tuition for an Arizona resident is two thousand six hundred and fifty-five dollars ($2,655.00). The state of Arizona now pays the University of Colorado two thousand dollars ($2,000.00) per year per medical student. The student is thereby not penalized for being an Arizona resident. Please be aware of the fact the student still has to pay the regular tuition fee of six hundred and fifty-five dollars ($655.00). Similar plans are available to dental and veterinary students. The state of Arizona provides sixteen hundred dollars ($1,600.00) per year for each dental student, and twelve hundred dollars ($1,200.00) per year for each veterinary student.

Complete understanding as to the method of subsidizing these students is most important. I would like to emphasize the next sentence as forcibly as possibly. This is not a giveaway program. A student must agree to abide by certain stipulations before he becomes eligible for the subsidy. He is required to sign a contract with the state of Arizona where he agrees to repay the subsidy either in services or cash. For each year his tuition is paid, he must agree to practice two years within the state of Arizona in order to repay that obligation. If the student decides not to return to Arizona to practice, he must then repay all the money expended in his behalf. He also must pay an interest rate of four per cent on this money. In reality, therefore, this program is a loan and must be paid by one of the two methods outlined above. The foregoing should quiet any fears about this being a giveaway program.

Of note, too, under this program is the fact that the participating schools will give students from Arizona a priority for admission. This is important to those Arizona students who despite recognized scholastic ability cannot find openings in professional schools. This priority is not an absolute guarantee that the Arizona student will be admitted to the professional school. The scholastic requirements of medical, dental, and veterinary schools are difficult to meet. Neither the states nor the schools participating in this compact are interested in educating mediocre students. Each professional school must determine which students are acceptable. The University of Oregon this past year made six places available to the state of Arizona for dental students. Eight students sent in their applications. After reviewing the scholastic records of these eight individuals, only two of the eight met the high standards of the University of Oregon. Despite the fact that six places were available, and despite the fact that eight Arizona students expressed desire to be dentists, only two were allowed to embark on this professional career. We are interested in training more doctors and dentists and veterinarians for the state of Arizona, but only if they will prove to be a credit to this state once they have been trained.

The student contract program for the academic year 1953-54 involves 62 students from five states enrolled in three profesional schools. Arizona has 5 students in veterinary medicine a Colorado Agricultural and Mechanical College, 2 in medicine at the University of Colorado, and 2 in dentristry at the University of Oregon. Montana has 3 students in veterinary medicine at Colorado Agricultural and Mechanical College and 1 student in medicine at the University of Colorado. New Mexico has 3 students in veterinary medicine at Colorado Agricultural and Mechanical College and 21 students in medicine at the University of Colorado. Oregon has 4 students enrolled in veterinary medicine at Colorado Agricultural and Mechanical College. Wyoming has 21 students in medicine at the University of Colorado. Dr. William C. Jones, Executive Director of the Western Interstate Commission for Higher Education, has forwarded a brief resume:

"Recognizing that the success of this program depends on an understanding of its objectives by the citizens of the states involved, the Commission has begun a series of intra-state meetings for a discussion of its organization and program. To these are invited college and university administrators and faculties, state officials, legislators, publicists and others. The first meeting was held at Salem, Oregon, in December, 1953; a second will be held at Helena, Montana in early March of 1954.

"The Commission is aware of the handicap to its activities by the official absence of the three states and two territories which have not yet ratified the compact. This is particularly true of California and Washington which together have 6 medical schools, 5 dental schools, 2 schools of veterinary medicine and the West's only school of public health. Several of these schools indicated interest in the contract program of the commission and are desirous of realizing some of its benefits in their financial support.

"Anticipating hopefully the time when these five states and territories will be full participants, the commission has invited their representatives to be present at all meetings and conferences arranged by the commission. It has instructed the executive director to be readily available to state officers, legislative committees, professional organizations and others within these states for any information or services desired.

"We are encouraged by the progress which has been made, but we should recognize that states are slow to develop interstate cooperation, except under some great compulsion. With the general spirit of optimism which prevails throughout the west we have both high enthusiasm and obvious reluctance to enter a program of interstate cooperation in higher education. We have no dire forces of immediate necessity. Regional cooperation in higher education in the West will be based thus clearly upon the enlightened self-interest of the states and perhaps we should clearly recognize this.

"If this be so, two facts should move us into a program of regional cooperation in higher education. First is the increased cost of higher education which must be anticipated in the years just ahead. The Legislative Auditor of Washington has made some projections on the situation in that state. The average enrollment in all state institutions of higher education in Washington is expected to increase from 22,000 in 1955-57 to 33,000 during 1963-65, a 50 per cent increase. Higher education costs in Washington, he anticipates, will rise at an increasing rate from $62 million for 1955-57 to $98 million for the 1963-65 biennium — a 58 per cent increase. This includes salaries, wages and operations and capital outlay. Salaries, wages and operations rise from $54.5 million for 1955-57 to $85 million for 1963-65, a 58 per cent increase. These projections could be duplicated for almost any state in this Western Region, for it is estimated that none of these eleven Western states will have an increase of college-age population between 1953 and 1970 of less than 65 per cent — five of them will have an increase of over 100 per cent, with California at the top of the nation with over 200 per cent.

"Second is the great number of American young people of ability who do not get to college. If we really have conviction that America's strength is in the increasing educational attainments of her people, we are concerned with the findings of the National Manpower Council, as reported in **Science** of June 5, 1953. This agency, established by President Eisenhower while serving as President of Columbia University, has reported that of those with ability to do college work, less than one-half ever get to college and only one-third graduate. We admit that is a grievous waste of our fundamental natural resource, human intelligence, and, if we would be considered educational statesmen, we must be concerned that the advantages of higher education shall be brought to an ever-increasing part of our citizenry.

It is the program of the commission to get those who have the responsibilities of higher education in the West, governors, legislators, and institutional administrators, to confer together to work out the programs in terms of needs and opportunities. Over the years this should develop acquaintanceship and confidence — a climate of understanding and adventure — in which interstate cooperation will be possible. This, we submit, is the essence of the democratic way — free men identifying their problems and working out their own solutions for these problems."

SUMMARY & CONCLUSIONS

It would appear from available statistics that

we do not have the population or money to support a medical school in Arizona at this time. If present trends in population continue, and the state can assume the large financial obligation necessary to build and maintain a medical school it is believed the year 1970 may see the introduction of legislation for a medical school. Presuming that it takes five years to enact such legislation; three years to assemble the faculty and construct the physical plant; the first student should enter the medical school in 1978. The Western Interstate Commission for Higher Education is providing ways and means for educating medical, dental, and veterinary students by cooperation with the surrounding Western states. These students are being encouraged to return to Arizona to practice their profession. The cooperative effort by the states should allow for better utilization of facilities now available. If the compact succeeds like a similar compact has already succeeded in the Southern states, many problems will be solved. The medical students, dental students, and veterinary students from Arizona should be adequately cared for up to and including the time when the decision must be made for establishing such schools within the boundaries of the state.

THE USE OF SERPASIL* FOR RESTLESSNESS IN ACUTE CLOSED HEAD INJURIES — A PRELIMINARY REPORT

Harry F. Steelman, M.D.
Phoenix, Arizona

SERPASIL has been used as a sedative in many conditions which are cerebral in origin. It was felt that it might be of value in restlessness due to closed head injuries.

Materials and Methods: Ten patients with acute closed type of head injuries were given Serpasil, 1 to 2 ccs. (2.5-5 mgms.) every 2 to 3 hours intramuscularly. No patients who were in shock were treated with Serpasil.

Observations and Results: Serpasil did not effect the state of consciousness, size, nor reactions of pupils to light, nor did it depress respiration. The results were uniformly good and all patients were quieted until recovery from the effects of the brain injury had occurred. In many patients the results were often dramatic and patients were sedated enough to make them amendable to nursing care and prevent them from injuring themselves by restless movements. No adverse effects were observed.

SUMMARY AND CONCLUSIONS: Serpasil was given to 10 patients with restlessness due to acute closed head injuries with uniformly good results. Restlessness was controlled without impairment of state of consciousness, pupillary size and response to light or depression of respiration. Initial observations indicate that serpasil is superior to other sedatives in patients with acute cranial trauma.

*Furnished by Ciba Pharmaceutical Products, Summit, New Jersey.

550 West Thomas Road.

Good News

For the second year in succession ARIZONA MEDICINE JOURNAL has been awarded a Plaque for General Excellence from the Arizona Newspaper Association presented by Blake Moffitt and Towne. The judging was supervised by the Western Society of Business Publications, Inc., San Francisco, California.

PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE

FIRST Admission. A fifty-five-year-old merchant was admitted to the hospital because of sweating and fever.

On the day before admission he was somewhat constipated, and while attempting to have a bowel movement he became chilly, and shortly began sweating. He was drowsy, went to bed early, and four times during the night vomited pink material. The next morning he was still drowsy, had blurred vision and had a temperature of 101.8°F., so he was advised to enter the hospital.

Five years previously, on routine examination, he was found to have mild hyptertension and diabetes mellitus. The diabetes was easily controlled by diet alone, and he felt well until two years before admission when he had a sudden onset of left-sided weakness. He was treated for six weeks in another hospital and subsequently at a rehabilitation center, with gradual but incomplete recovery of function in the left arm and leg. Seven months before entry he had a one-week episode of fever, diagnosed as "virus infection"; the urine was said to be "infected," at that time. Review of systems and past history were otherwise noncontributory.

Physical examination showed an obese, hirsute, well developed, drowsy man, who appeared acutely ill. There were scattered rales and bronchial breathing over the chest bilaterally. The heart was slightly enlarged, the border of dullness extending to the left, and there was a Grade 2 apical systolic murmur. There was questionable resistance to palpation over the right upper quadrant of the abdomen. The prostate was twice the normal size. There was left hemiparesis, with generally sluggish reflexes, and an extensor plantar reflex on the left.

The temperature was 104°F., the pulse 120, and the respiration 36. The blood pressure was 130 systolic, 90 diastolic.

The urine was cloudy, had a specific gravity of 1.018 and gave a xx test for albumin, a green sugar reaction and a negative reaction for bile and acetone; the sediment contained 10 red cells, 16 white cells with frequent clumps, a rare coarsely granular cast and a few bacteria per high-power field. Examination of the blood disclosed a hemoglobin of 15.5 gm. per 100 cc. and a white-cell count of 27,000, with 99 per cent neutrophils. The non-protein nitrogen was 33 mg., and the blood sugar 260 mg. per 100 cc., and the carbon dioxide 25.5 milliequiv. per liter. A lumbar puncture revealed normal dynamics and a normal appearance of the spinal fluid, which was negative on cytologic examination, had a total protein of 50 mg. and a sugar of 170 mg. per 100 cc. and gave a gold-sol curve of 0001110201. The bromsulfalein test demonstrated 58 per cent retention of the dye after forty-five minutes. A roentgenogram of the chest showed the heart to be considerably enlarged, chiefly in the region of the left ventricle. The superior mediastinum was broad, apparently owing to a tortuous aorta and fairly prominent vena cava. The lung fields were clear. An intravenous pyelogram was unsatisfactory, but there was less excretion on the left. An electrocardiogram revealed a normal rhythm at a rate of 75, a PR interval of 0.16 second, low T waves in Leads 1,2,3, V5 and V6 and upright T waves in Leads V1, V2, V3 and V4. Cultures of urine showed no growth. Heterophil-antibody agglutinations for typhoid, paratyphoid and brucella organism were negative, as was a smear for malaria.

The patient was given penicillin, streptomycin and terramycin but continued to have irregular temperature spikes up to 101°F. On the ninth day cystoscopy was performed, and a markedly enlarged prostate was found. The left ureter could not be catheterized. On the next day slight jaundice was noted. The blood culture was reported as showing Bacillus pyocyaneous (Pseudomonas aeruginosa) overgrowing Staphylococcus albus. The nonprotein nitrogen was 31

31 mg., the albumin 3.48 gm., and the globulin 2.31 gm. per 100 cc., with an albumin-globulin ratio of 1.5. The stool showed a faint trace of urobilinogen; the urinary urobilinogen was 0.7 Ehrlich units. The serum bilirubin was 0.5 mg. direct and 0.9 mg. total, and the alkaline phosphatase 9.2 units per 100 cc. A repeat urine for urobilinogen contained frank blood. Cephalin flocculation was x in forty-eight hours. A Graham test revealed a nonfunctioning gall bladder and a suggestion of calcification above the right kidney.

The patient continued to have chills and an irregular, spiking fever, with a maximum temperature of 106°F., and although the physical examination remained unchanged the white-cell count rose to 51,000, with 97 per cent neutrophils, many of which were band forms. On the eighteenth day a blood culture grew Alcaligenes faecalis. An x-ray film of the abdomen demonstrated a 1-cm. calcific density in the left pelvis, and an intravenous pyelogram showed the left kidney to be larger than the right, when poorly defined margins. Excretion was slowed in the left kidney, and the left pelvis, calyxes and proximal ureter was dilated. The calcification lay in the position of the distal ureter, and there was evidence of prostatic enlargement. The fever gradually subsided, and on the thirty-second day a left nephrectomy was performed. The pathological diagnoses were renal lithiasis, with hydronephrosis, and acute and chronic pyelonephritis.

Postoperatively, the patient's general condition remained the same. He was afebrile, and urine output was adequate, but with a residuum of about 200 cc. The urine had a specific gravity of 1.008 and gave a negative test for albumin, with 3 red cells and 60 white cells per high-power field in the sediment. He was discharged on the fiftieth day with arrangements for catheterization as necessary and instructions to return in a month for prostatectomy.

Second Admission (seventeen days later). After a week at home the temperature returned to 101 to 102°F., and the patient became anorexic and dehydrated. The urethral catheter was replaced and streptomycin and penicillin administered, but without effect, and he was readmitted to the hospital. Physical examination and laboratory data were essentially unchanged. He was given streptomycin, aureomycin and terramycin. The urine output ranged from 500 to 1000 cc. daily, and his condition remained stable except for occasional hiccups until the seventh day, when severe dyspnea, cyanosis and tachycardia (rate of 180) suddenly developed. There were rales at both lung bases and a to-and-fro apical cardiac murmur. A roentgenogram of the chest showed no change from previous films. An electrocardiogram revealed sinus tachycardia (rate of 150), with slurred S waves. The QRS complexes were widened slightly up to an interval of 0.1 second, and there was an occasional premature ventricular beat. The T waves were low in all leads; there were no abnormal Q waves. The R waves were upright across the chest. The patient as digitalized and dyspnea decreased. A repeat electrocardiogram the next day showed normal rhythm at a rate of 100. The slurred S waves had disappeared, and the QRS complex was normal.

Distressing hiccups returned, and the temperature spikes became higher, up to 105°F. The spleen was easily palpable, and there was a question of a large, nontender right-upper-quandrant mass. The white-cell count was 15,400, with 83 per cent neutrophils. The urine was cloudy and dark amber, with a specific gravity of 1.018, and gave a negative test for albumin; the sediment contained 20 red cells, 100 white cells and a few bacteria per high-power field. The serum sodium was 124.5 milliequiv., the chloride 91 milliequiv., the potassium 2.9 milliequiv., and the carbon dioxide 29.8 milliequiv. per liter; the nonprotein nitrogen was 24 mg., and the serum bilirubin 1 mg. direct and 1.4 mg. total per 100 cc.

On the tenth hospital day a cholecystotomy was done. On the next day the patient became unresponsive, with rapid, noisy respiration, a stiff neck and a rapid, regular heart rate. Blood cultures taken on the seventh and eighth days all yielded Escherichia coli, which was insensitive to streptomycin, sureomycin, terramycin and chloramphenicol. On lumbar puncture the cerebrospinal fluid was under an initial pressure equivalent to 220 mm. and a final pressure equivalent to 165 mm. of water after removal of 15 cc., was lemon-tinted and grossly cloudy, and contained 4500 cells per cubic millimeter, all neutrophils. Coma deepened, and he died on the thirteenth hospital day.

DR. J. D. HAMER

This case appears to be one in which a 55 year old man had more widespread infection in

his body that his doctors could cope with in the light of their impressions and diagnosis; certainly more than the patient could handle inasmuch as he finally succumbed to an overwhelming septic infection terminating in the central nervous system.

Previous to the first admission, the man was found to have hypertension and diabetes, and apparently had suffered some type of cerebral lesion two years previously, with a residual left hemiparesis.

An illness seven months previously had been diagnosed as "virus infection", with some urinary infection at that time.

On the first admission, there were scattered rales over the lungs, and an enlarged heart, an apical systolic murmur, a large prostate, and a high fever.

At this time, numerous studies were made by the laboratory. Albumin, casts, some blood and pus were in the urine, white count was 27,000, with 99% polys, blood sugar was 260 mgms. per 100 c.c. of blood. Lumbar puncture yielded approximately normal findings in the spinal fluid, and liver function tests were abnormal to the extent that liver damage should be suspected. There was no demonstrable lung disease to x-ray, and the typhoid, brucellosis and malaria tests were negative.

The patient did not respond well to administration of several types of antibiotics, so, after further studies, which were centered on the urinary tract, a left nephrectomy was performed. By this time, blood cultures had shown B. Pyocyanus, Staphylococcus Albus, and later, a culture yielded Alcaligenes Fecalis.

After recovery from the operation, the man improved, so was sent home to await a period of time, because later, he was to be sujected to a prostatectomy.

However, before the month which was estimated for convalescence, was up, the the patient was in the hospital again with a high fever; it was then that something happened to produce a cardiac blow-up, with dyspnea, cyanosis and tachycardia. Digitalis was given, with improved these complaints. After the cardiac episode, the fever arose again, and a mass was felt in the right upper quadrant of the abdomen, for which a cholecystotomy was done. Following this, the next day, in fact; meningeal symptoms developed with all their fury. The blood culture at this time yielded Colon Bacillus. 4500 cells were found in the spinal fluid, with 99% polys. This last episode of C.N.S. infection finished the patient. We are told that the Coliform Bacillus was insensitive to all the antibiotics.

In considering this case, one is impressed with the variety of organisms shown in the blood cultures, four to be exact. It seems obvious also that there must have been a septicemia from some source, because the performance of a left nephrectomy did not stop the process. Yet in reading the protocol, it appears also that the urinary tract was involved, or the prostate, to further the stimulus or portal of entry for the septicemia. Manifestations of a wide spread infection developed in the heart, the biliary tract, spleen and terminally, the central nervous system.

B. Pyacyanius has been known to cause blood stream infections, and this organism is not susceptible to the antibiotics used in this case. Another one has been reported effective, however. Coliform Bacilli usually are sensitive to the mycins, if used in sufficient dosage. Both of these organisms can be found in the stool, and both can cause similar types of infection.

The most common disease produced by the Colon Bacillis is urinary tract infection, either following dysentery, or thru trauma to the urinary passages, from inlying catheters, bladder stasis or obstruction of a ureter. Frequently in the infections, the Colon Bacillus has, as its companion, the Streptococcus Faecalis. Bacteremia with these organisms are rare, except in infants and elderly debilitated individuals. Diabetics are particularly subjected to Colon Bacilli infections, especially men with neurologic bladders, prostatic hyptertrophy, urethral stricture or calculi.

In severe infections due to the colon group, the prognosis depends upon several factors. First, pure Colon Bacilli infections do better than the mixed types. Second, the age and condition of the patient makes a marked difference; infants and debilitated patients do badly. Third, the type of anatomic difficulty in the urinary tract has a marked bearing upon prognosis.

In the urinary tract, the degree of obstruction to the renal parenchyma and the possibility of remedying the obstruction to urinary flow will influence the outcome of an acute attack, and ultimate coarse of the disease. Primary infections, locally only, in diabetics and infections due

to Proteus or Pyocyanius are apt to be resistant to therapy.

In this case, its progress suggests a bacteremia, with final meningeal involvement with one or more of the Coliform organisms. Either the wrong therapy was used among the antibiotic or chemotherapeutic agents, or they were not used in sufficient concentration to affect a cure. I suspect there will be found in the autopsy multiple septic foci in the remaining kidney, spleen, liver, lungs, endocardium and meninges.

Formation of abscesses in the brain itself is a distinct possibility.

This bacteremia could be the result of one of the organisms, or a combination or more than one of the organisms found in blood culture. A more likely final diagnosis, however, would center in the heart, in the form of a subacute bacterial endocarditis. That would be my first choice among the several possibilities for a diagnosis.

DIFFERENTIAL DIAGNOSIS

Dr. Allen G. Brailey: In this case the nature of death seems fairly obvious; it is more difficult to guess how and where the fatal disease arose.

May I see the x-ray films?

Dr. Stanley M. Wyman: In the x-ray films of the chest the heart shadow is enlarged. The patient, however, is lying on his back so that part of the apparent enlargement is due to magnification. I think the superior mediastinal fullness is probably vascular in origin. The original pyelogram showed a large amount of material obscuring the kidneys, and the examination is unsatisfactory. A density overlying the left sacrum is seen that in subsequent examinations, a little more than two weeks later, has progressed downward somewhat; this is quite consistent with a large stone in the left lower ureter. On the second pyelogram the left kidney shows function that cannot be seen with any degree of certainty on the original examination. There is slight calcification in the left kidney.

Dr. Brailey: What about calcification above the right kidney?

Dr. Wyman: That is seen on this film of the gall bladder. I am not sure of its nature; I think it is a "red herring." One film from a negative barium enema examination is included.

Dr. Brailey: Is the liver size normal as far as you can tell?

Dr. Wyman: The liver is not grossly enlarged.

Dr. Brailey: Do you think this could be a dissecting aneurysm in the mediastinum?

Dr. Wyman: I doubt it seriously.

Dr. Brailey: On the final admission a to-and-fro apical murmur was heard. Was that due to a ruptured valve, to aortic regurgitation to pericarditis or to something else?

Dr. F. Dennette Adams: May I make some corrections in the protocol that may help you? You can discount the bronchial breathing and the cardiac murmur; they were not heard by most observers. During the first few days we thought (and justifiably, it seems to me) that we were dealing with a case of urinary infection based on prostatic enlargement. The patient was promptly established on constant drainage and did very well for a few days. But he then began to have recurrent bouts of fever between which he was better. It was then that further studies were initiated.

Dr. Brailey: Was he afebrile for a while after constant drainage was started?

Dr. Adams: Yes; the temperature came down and it looked as though the Foley catheter and antibiotics had straightened him out. When we were about ready to send him home, the episodes of fever with elevated white-cell count began.

Dr. Brailey: This patient died as a result of overwhelming infection. As for the infection itself, I am embarrassed with riches. Four different organisms were cultivated from the blood, of which three were gram-negative bacilli. The Staph. albus can be ignored as a contaminant, but I am obliged to accept the other three as significant although I suspect that it was the resistant strain of Exch. coli that gave him the coup de grace. But how does it happen that three organisms were grown? It is a curious fact, and one not easily explained; infections are not commonly due to multiple organisms. Even if several organisms are introduced into a wound, we believe that one quickly tends to "outgrow" the others.

This man had had a source of infection in the kidney for a long time, probably for years. It is not helpful that the protocol makes no mention of tenderness of either kidney area. In fact there is no mention of localizing tenderness of any sort. However, much of the time he was so sick that probably he was not very co-operative, and, furthermore, in fatal pyelonephritis or necrotizing papillitis, there may not

be any renal pain or tenderness. I wonder whether cultures were taken from the excised left kidney and, if so, what organisms grew out.

If we assume for a moment that the fatal infection arose from pyelonephritic kidneys, when did it first burst its renal confines and invade the blood stream? I am told that the patient had a cerebrovascular accident two years before admission that resulted in left hemiplegia. Such episodes are very often due to emboli, but it is hardly credible that he had emboli to the kidneys or that he nursed a subclinical bacterial endocarditis for two years. Seven weeks before entry he had fever for a week, and urinary-tract infection was noted at that time. Perhaps he first had bacteremia at that time. The onset of the acute illness is carefully timed for me, and the suggestion seems to be made that there was some causal relation between straining at stool and the onset of chilliness and sweating. The chilliness and sweating in this case surely marked a rapid extension of infection, but it is difficult to see what his toilet activities could have had to do with that unless, conceivably, a small abscess in some organ ruptured and spilled directly into a vein. Such accidents must be rare but they have been described by Webber and Coe, and such a hypothetical event would have the merit of explaining much of what happened to this man. It would explain the acute onset, and it would offer a reason for the culture of three separate organisms from the blood. However, the onset of acute pyelonephritis or papillitis is often as acute as this without obvious explanation.

It is hard to be sure of the kidney lesion. There are many factors in favor of necrotizing papillitis of the so-called subacute or protracted sort. The patient was a man. He had diabetes. It is interesting that the severity or mildness of the diabetes seems to bear no relation to the incidence of papillitis. The clinical course in papillitis is usually brief and stormy, and it is often complicated by overwhelming blood-stream infection. Against papillitis is the fact that kidney function remained satisfactory and azotemia did not develop. The majority of persons with necrotizing papillitis die of uremia but in 1950, Robbins et al. reported 19 cases, in 5 of which the patients never showed nitrogen retention but died of septicemia, toxic hepatitis and other causes. Perhaps it is of only academic interest whether the kidney lesion is classified as papillitis or pyelonephritis. I expect that the liver showed a toxic hepatitis and perhaps multiple abscesses as well.

Did the patient have a bacterial endocarditis? If new heart murmurs of significance developed perhaps endocarditis should be considered. There was no evidence of myocardial infarction. Presumably, the tachycardia was a toxic effect, and, in view of some changes in the T waves as reported, the rhythm probably arose from an ectopic focus near the node. A terminal meningitis obviously developed.

If I have drawn a true picture of the development of this man's fatal illness, why did he have an interval of freedom from fever during which it was hoped that he was convalescent? The left kidney, which was perhaps the chief original focus of the infection, had been removed, and he had had vigorous treatment with antibiotics, which may have suppressed the disease for the several days during which he appeared to be better. It is somewhat astonishing to read that the surgeons found the courage to remove the gall bladder on the second entry, but I suppose it was hoped that he had an empyema of the gall bladder whose removal would cure him.

Dr. Benjamin Castleman: A cholecystotomy was done; the gall bladder was not removed.

Dr. Brailey: Then the physicians caring for the patient thought that the patient had an empyema of the gall bladder and that drainage would cure it.

Finally, in retrospect, could anything more effective have been done to have averted the fatal outcome? Certainly, it is a great pity that the urinary-tract infection was not discovered at its onset and treated effectively from the start. Diabetes is a great handicap in the treatment of infection, and one wishes that the diabetes had been handled more effectively. If any effort was made to reduce his weight to normal it was unsuccessful. The organisms to which he succumbed belong to a class that in general do not respond well to antibiotics. Perhaps the strains that he harbored were hopelessly resistant to antibiotics from the beginning, but it is possible that a heavier dosage at the start would have helped him to get the upper hand before fatal resistance to drugs had developed.

I think that the diagnoses were chronic and acute pyelonephritis, with possibly necrotizing

papillitis, bacteremia due to Esch. coli, multiple abscesses, meningitis and diabetes mellitus.

Dr. Adams: May I add that during part of the early hospital course the patient was so sick that it was impossible to pursue further investigations? An attempt was made to get retrograde renal studies, but the prostate was so large that the urologist was unable to pass a catheter into either ureter. Efforts to obtain intravenous pyelograms were hampered for several days by inability to clear the bowel. When this was finally accomplished, we discovered what we had thought all along; that he had renal infection. We were next faced with the decision whether to go after the stone or do the simpler procedure, which was to drain the kidney through the back.

Dr. Brailey: I am not criticizing what was done in the hospital, but, after, the situation had existed for months or years before any treatment was received.

Dr. Adams: I merely want to clarify the sequence of events after the patient came to the hospital. After removed of the kidney he did beautifully. During convalescence there was much deliberation whether to operate on the prostate. But he was so well and had been through such a serious illness that we decided to give him a vacation and bring him back later for prostatectomy. He left the hospital in fine shape but got into more trouble during the period at home. The reason for the gall bladder operation was that the biliary tract had been considered as the possible cause of the sickness dusing the first admission. During that time jaundice developed. It was postulated that he might have an infected gall bladder, perhaps with a stone in the common duct, and that our diagnosis of renal infection, which had not been proved at the time, was incorrect. On the second admission we were forced to reopen the question of the biliary tract.

Dr. Castleman: Did you not feel a mass in the right upper quadrant?

Dr. Adams: There was a good deal of discussion about that. Some of us believed that the abdomen was tender, with a poorly definable mass in the right upper quadrant. The second operation was done because we had to grasp at every straw. We continued to worry about infection in the kidney bed, although at no time, even when he had the "red-hot" kidney, did we find tenderness or any localizing sign.

Dr. Lorande Woodruff: This case was confusing because at no time was there any pain or tenderness over the left kidney. This lack of signs or local symptoms was one thing that stayed my hand for a long while. I could not be sure that the area of calcification seen in the plain film was a stone, and even if it was it might have been present for several years and had nothing to do with the acute illness. We needed additional evidence, which was finally supplied by the second pyelogram.

CLINICAL DIAGNOSES

Septicemia and meningitis due to Exch. coli.

Pyelonephritis.

Diabetes mellitus.

DR. ALLEN G. BRAILEY'S DIAGNOSES

Acute pyelonephitis, with ?necrotizing papillitis.

Bacteremia due to Exch. coli.

Multiple abscesses.

Meningitis due to Exch. coli.

Diabetes mellitus.

ANATOMICAL DIAGNOSES

Subacute bacterial endocarditis due to gram-negative bacillus.

Septic infarct of right kidney.

Meningitis, subacute bacterial.

Ureterolithiasis, left.

(Cholelithiasis.)

Operations; nephrectomy, left, and colecystotomy.

PATHOLOGICAL DISCUSSION

Dr. Castleman: At the operation during the final admission Dr. Leland S. McKittrick found a thin-walled gall bladder, normal except for some stones, which he removed; the bile appeared normal, and there was no inflammation of the wall. There was no evidence of residual infection in the kidney bed, and this was confirmed at the time of autopsy. The right kidney was swollen and contained one abscess that measured 3 by 2 cm. and was full of bacteria.

Microscopical examination showed that near the abscess was a large vessel containing a septic embolus. This came from large, fairly firm, granular vegetations attached to the aortic cusps that on microscopical examination were well organized and contained innumerable organisms. The rest of the kidney was not too diseased. We did find a stone in the lower left ureter that followed or was associated with the pyelonephritis or pyonephrosis on the left side.

I believe the sequence of events was an original renal infection on the left side due to the stones. As we know, a septicemia and also a bacterial endocarditis developed, and may well have been present after the first operation. Then perhaps he recovered, or th endocarditis was masked by the antibiotic treatment that he received for the renal infection. A flare up of the endocarditis with an embolus to the kidney followed. There was, as was suggested, a meningitis — almost certainly a bacterial, embolic type of meningitis — without any real infection in the brain. The spleen weighed 700 gm. and was septic.

Dr. Adams: I did not misinform Dr. Brailey concerning that cardiac murmur. Looking through the record, I cannot find that it was heard. Furthermore, I doubt if anyone could have heard it in this very thick-chested man, who had constant noisy, grunting respirations. Dr. Gordon S. Myers, who examined his heart a few days before death, heard no murmurs at all.

Dr. Castleman: Dr. Kunz, will you tell us about the cultures?

Dr. Lawrence J. Kunz: The organism isolated from the blood cultures on the last admission that were reported as Exch. coli were culturally consistent with the mucoid type of coliform bacteria. Just before the patient died, Dr. Thomas Paine took a subculture of one of those plates to do a tube-sensitivity test, since the organisms had been found resistant to all antibiotics, and discovered that it was an atypical B. pyocyaneus (Ps. aeruginosa), a very mucoid organism that is rarely seen but on prolonged cultivation did show pigment. I think that might resolve the difficulty of the three organisms in a single condition. The infection was quite resistant to all antibiotics tested.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS — A.M.A.

The Council on Medical Education and Hospitals of the A.M.A. is planning a program on the subject of "The Potential Use of Television in Postgraduate Medical Education" to be presented as a full-day working conference on February 5, 1955 in the Ballroom of the Palmer House Chicago. This is expected to be the first of a series of annual "workshop" type conferences on one particular aspect of postgraduate medical education. Television is the subject of the first meeting because of the extreme interest in this medium that has been shown recently, as well as its pertinence to the future of postgraduate education. The program is planned in such a way as to present both the educational and technical aspects of the subject, so that medical educators and medical society, hospital and specialty society representatives at the meeting will be able to obtain a broad picture of the medium and help them to determine whether or not it is something they might use in their own programs, and if so the problems involved in its use. Following a keynote address by Dr. John Cline, the morning session will be devoted to consideration of the purely educational aspects of the medum. The afternoon session will deal with technical considerations and financing. The participants will be drawn from the fields of general education, television, industry, medicine, medical education, pertinent government agencies and others. It is planned to have a number of demonstrations in the afternoon session using actual camera chains and receiving equipment. Following the session it will be possible for the audience to examine these and observe some of them in further action, and visit a local television station in action.

INTERNATIONAL COLLEGE OF SURGEONS

Mid-Atlantic Div. Regional Meeting

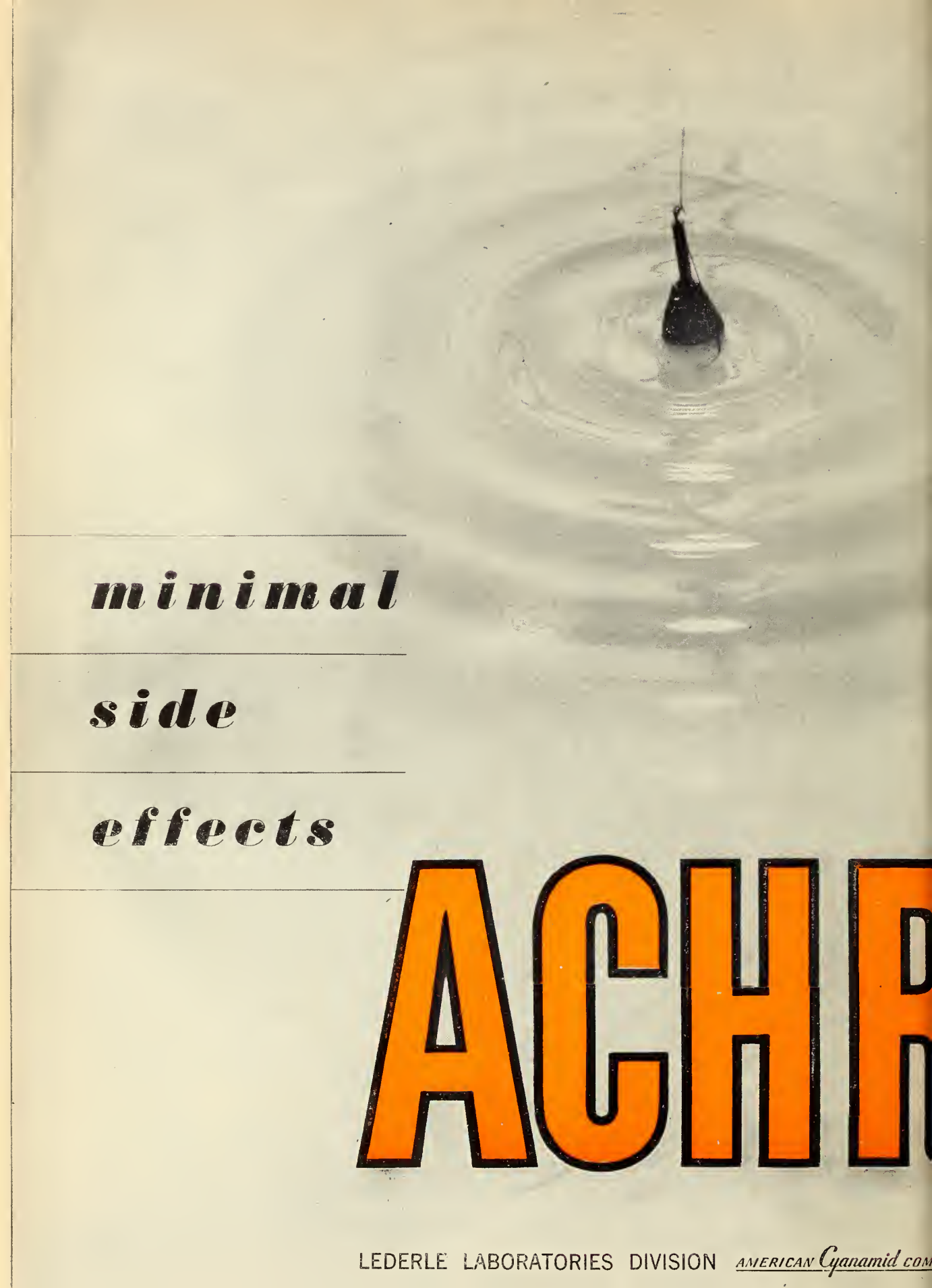
A cordial invitation is extended to members of the surgical and allied professions to attend the Mid-Atlantic Division regional meeting of the United States Section of the International College of Surgeons to be held in Washington, D. C. February 11 and 12, 1955. Headquarters will be in the Hotel Statler where all the scientific sessions will be held.

There will be a luncheon each day and a banquet preceded by a social hour on Friday evening, February 11.

A very interesting program has been planned for the ladies including a tour of the White House.

Registration fee—$5.00. No charge for nurses, interns, residents and the military.

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THE *President's* PAGE

ORGANIZED MEDICINE

ORGANIZED MEDICINE IN ARIZONA IS TAKING ITS PLACE IN THE PROGRAM FOR POST-GRADUATE EDUCATION BY PROVIDING INSTRUCTION IN THE VARIOUS FIELDS OF MEDICINE WITHIN OUR OWN STATE. MEETINGS OF THE GENERAL PRACTITIONERS' GROUP SUCH AS THE RECENT AND WELL ATTENDED CONFERENCE AT TUCSON, BY THE STATE GROUP OF THE COLLEGE OF SURGEONS AND COLLEGE OF PHYSICIANS AND THE VARIOUS SPECIALTY GROUP MEETINGS, ADD TO THE OPPORTUNITY FOR SELF IMPROVEMENT. THE THIRD ANNUAL CANCER SEMINAR TO BE HELD JAN. 13, 14, AND 15, 1955, HAS IN THE SPACE OF THREE YEARS BECOME A NATIONALLY KNOWN AND ATTENDED CONFERENCE WITH HUNDREDS OF REGISTRANTS FROM OUTSIDE OF THE STATE. IT IS OBVIOUS, THEREFORE, MEDICINE IN ARIZONA IS NOT SHIRKING ITS DUTY TO ITS MEMBERS AND IT IS ATTEMPTING IN EVERY WAY TO PROVIDE THEM WITH THE MEANS TO FURTHER IMPROVE THEIR CARE OF THE PATIENT.

OSCAR W. THOENY, M. D.,

PRESIDENT ARIZONA MEDICAL ASSOCIATION, INC.

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

THE DANGER AROUND US

NOT many years ago we had an inquiry relative to some radioactive spring water. Its radioactivity was known to be small in amount; the question was, whether it was safe for daily human consumption. We could not answer the question, and a search of the literature seemed to indicate that no one knew at that time just how much radioactive material could be safely ingested. Much information regarding this subject has been gained since the widespread use of radioactive isotopes, but there is still much to be learned.

Since the discovery of x-rays slightly more than a half-centry ago, many scientists have given much time and though to the determination of a safe maximum exposure to x-rays and other ionizing radiation. In the light of increasing knowledge the accepted maximum safe exposure has been revised on occasions, and each revision has been downward. The value accepted at this time is 0.3 r (roentgen) per week (with certain permissable slight variations dependent on quality of radiation, portions of body exposed, and other conditions).

It is revealing then, and perhaps a little surprising, to note that some workers estimate that the average individual receives from natural and artificial sources in his daily environment a daily dosage of about 0.015 r; about one-twentieth of the maximum permissable daily dose! The natural sources include cosmic rays, potassium 40, carbon 14 and radon in his body and environment. Artificial sources include luminous watch dials, certain eyeglass lenses, TV projection apparatus and release of atomic energy.

Though on the surface, these facts may appear alarming, actually the average individual has nothing to fear as he still has 19/20 or 95 per cent of his reserve tolerance available for the unusual occasional exposure. Not so for the man who must work daily in relatively high concentrations of radioactivity. In many cases he must work near the maximum permissable dosage level and therefore has no reserve tolerance to draw on to allow for unusually high exposures. He is in danger and cannot allow himself any relaxation of protective measures or and indiscretions in this regard.

The ordinary fluoroscope may deliver from 15 to 35 r per minute in its direct beam under usual operating conditions. The physician who uses the x-ray or fluoroscope frequently may, by intercepting this direct beam by some part of his body, in a few seconds receive a dose exceeding his maximum safe dose for a whole week! It is obvious then that the physician working with these agents must be ever alert to his danger and always mindful of his protection. Just as the surgeon develops a rigid, uncompromising, aseptic technic against the

bacterial contamination which he cannot see but considers always present, so also must the radiation worker adopt an inflexible, strict "aseptic" technic against the radiation danger which he must always consider present and never deviate from this. The temptation is great to leave off the gloves for a short fluoroscopy "just this once", or to lift the radium applicator with his fingers since the forceps are not handy "just this once"; but he must never allow himself such indiscretions.

Small wonder then that we are alarmed when we see fluoroscopes in many offices —often with no lead apron or gloves in sight, x-ray machines with no apparent regard for direction of beam or protection for the operator, and x-ray shoe-fitting machines in stores. These situations are dangerous and with the probability that the increasing manufacture and use of radioactive products will increase, even though slightly, the amount of daily irradiation everyone receives, they will become more dangerous.

Even at the risk of being accused of an economic interest in this situation, we feel our readers deserve a warning of this danger around us. Two premises are assumed. (1). A danger must be recognized in order to be combatted: Ignorance of the dangers confers no immunity to it. (2). Protective measures must be known before they can be practiced, and must be consistently and constantly practiced to be effective. Please be careful.

AMERICAN COLLEGE OF CHEST PHYSICIANS

THE Council on Postgraduate Medical Education of the American College of Chest Physicians, in cooperation with the respective state chapter of the College as well as the staffs and faculties of the local hospitals and medical schools of Philadelphia, will sponsor the Eighth Annual Postgraduate Course on Diseases of the Chest, to be held at the Bellevue-Stratford Hotel, Philadelphia, Pennsylvania, March 7-11, 1955.

Our postgraduate courses endeavor to bring physicians up to date on recent advancements in the diagnosis and treatment of heart and lung disease. Tuition is $75.

Further information may be secured by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

411 Security Building, Phoenix, Arizona

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, October 16, 1954, issued certificates to practice medicine and surgery in this State to the following doctors of medicine:

BRADY, JAMES EDMUND, JR., 3131 E. 2nd St., Tucson, Arizona.

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●

Attention Doctors Keep your 1955 *Medical Directory up-to-date. Similar lists will be published quarterly following each meeting of the Board of Medical Examiners. Tear out this listing and keep it in your Directory Booklet.*

Dramamine's® Effect in Vertigo

Dramamine has become accepted in the control of a variety of clinical conditions characterized by vertigo and is recognized as a standard for the management of motion sickness.

Vertigo, according to Swartout, is primarily due* to a disturbance of those organs of the body that are responsible for body balance. When the posture of the head is changed, the gelatinous substance in the semi-circular canals begins to flow. This flow initiates neural impulses which are transmitted to the vestibular nuclei. From this point impulses are sent to different parts of the body to cause the symptom complex of vertigo.

Some impulses reach the eye muscles and cause nystagmus; some reach the cerebellum and skeletal muscles and righting of the head results; others activate the emetic center to result in nausea, while still others reach the cerebrum making the person aware of his disturbed equilibrium. *Vertigo may be caused by a disease or abnormal stimuli of any of these tissues involved in the transmission of the vertigo impulse, including the cerebellum and the end organs.*

A possible explanation of Dramamine's action is that it depresses the overstimulated labyrinthine structure of the inner ear. Depression, therefore, takes place at the point at which these impulses, causing vertigo, nausea and similar disturbances, originate. Some investigators have suggested that Dramamine may have an additional sedative effect on the central nervous system.

Repeated clinical studies have established Dramamine as valuable in the control of the symptoms of Ménière's syndrome, the nausea and vomiting of pregnancy, radiation sickness, hypertension vertigo, the vertigo of fenestration procedures, labyrinthitis and vestibular dysfunction associated with antibiotic therapy, as well as in motion sickness.

Any of these conditions in which Dramamine is effective may be classed as "disease or abnormal stimuli"* of the tissues including the end organs (gastrointestinal tract, eyes) and their nerve pathways to the labyrinth.

Dramamine (brand of dimenhydrinate) is supplied in tablets of 50 mg. and liquid (12.5 mg. in each 4 cc.). It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.



The site of Dramamine's action is probably in the labyrinthine structure.

*Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

A recent symposium in Los Angeles (at the County General Hospital) gave LEUKEMIA THERAPY a "shot in the arm". . . . Actually that statement is both slangy and wrong, since the new drug "MYLERAN" is given by mouth. . . . It was praised by such experts as Cecil Watson of Minnesota and Max Wintrobe of Utah, but it should be said at once that it is not a cure. . . . Myleran was first used only 18 months ago in England. No prolonged effects can be known, but it is said to mark "the greatest advance yet known" on the basis of this short experience. . . . It is said to be mostly effective on the chronic leukemias. Doctors (and newspapers) are mumbling such comments as "no deaths in one series for 18 months"; "remissions last 4 to 18 months"; "life may be prolonged for years"; etc.

One of the jillion Calypso songs has the title "Just When We Think Yes, He say No". . . . This might be a description of the uncertainty about treatment of RADIATION EXPOSURE. Just when we get it fixed in our minds that a few units of blood might help, Dr. John Bugher, director of the A.E.C.'s Division of Biology and Medicine, says "Repeated small transfusions from different donors may create MORE hazard than from the original radiation hazard". . . . Use them only in emergency, since incompatibility and hepatitis may over-balance the value. . . . The man he say 'no', almost.

The J.A.M.A. published an abstract of the article in ARIZONA MEDICINE (August 1954) by H. M. Purcell Jr., — "Pulmonary Hyaline Membrane". . . . It is good to see recognition of original reports from our journal.

There have been several paragraphs in this column on the various aspects of BARBITURATE POISONING. . . . One of the newer methods has not been mentioned here and, since it has some support and has a tongue-twisting title, we give it to you. Robie was the first to use Reiters' UNDIRECTIONAL ELECTRIC DIENCEPHALIC STIMULATOR. It raises the B.P., increases depth of respiration, improves the pulse, and is said by Michael and Baker of Columbus, Ohio, to keep "the individual alive until the body has a chance to destroy the barbiturate".

A plea for more small-caliber, INDIVIDUALIZED MEDICAL RESEARCH is made by Bromme, as quoted in the journal of the Michigan State Medical Society. He insists that all research need not come from electronic computing machines. Someone must be the Beaumont who looks into St. Martin's stomach, and then thinks. Someone must look at a few thousand cultures, and remember. Someone must put 2 and 2 and 2 together from the literature. . . . Perhaps your case report at a staff meeting will set the mental (not IBM) wheels a-going.

The 'miracle' of a MITRAL COMMISSUROTOMY is still bright and fresh to those people who know about it. It is, incidentally, a miracle produced somewhat like the product Churchill described, by blood, sweat, and years. . . . The first step towards 'topping' the operation has been taken by two surgeons who helped make it possible. Drs. Keyes and Lam of Detroit have REPEATED a commissurotomy on a patient whose stenosis recurred after the first operation. . . . And they warn that it may be repeated more than twice if necessary!

Cooley, and the versatile De Bakey, report (in the same issue of J.A.M.A.) that they have done the MITRAL VALVOTOMY on five pregnant women, with good results. . . . Their other results were quite good too in a series of 110 patients with mitral stenosis. There was a 9% mortality, almost entirely due to thrombosis and embolism, but 74% of survivors did very well. . . . Any mortality at all is sure to start a gleam in a surgeon's eyes; it should be reduced, and probably can, especially if caused by clotting.

'Hospital Topics' has a section of News Briefs. The November issue mentions what is either a new dragon, or a straw-man. . . . The Joint Commission for HOSPITAL ACCREDITATION, sequel to the old certifying committee of the American College of Surgeons, is accused of clamping down too hard and fast in the midwest. Three well-known hospitals in one city lost their accreditation. . . . The chief pitfalls are medical staff organization and attendance at staff meetings. The chief beef of the hospitals is that the manual of rules is not yet available. . . . Whether the action is too rough or not, I'll bet hospitals will jump, just to be on the safe side.

Dr. Harold Diehl of Minnesota rassled with the topic "THE TRUTH ABOUT COMMON COLDS" in a recent Sunday magazine section (approved by the A.M.A.). . . . No news of help to the M.D., or of comfort to the patient resulted. . . . We are

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nearer to knowing about the causes, he says, but the 'cold' virus origin has many imitators 'Cold vaccines' are of no proved value. Antihistamine drugs help only to decrease some of the allergic signs and symptoms, and aspirin to decrease the aches. . . . Antibiotics are useless against the 'cold', useful against complications. . . . Dr. Diehl still believes that the best relief comes from a preparation which he made famous, codeine and papaverine (Remember, 'copavin'?) This requires a doctor's prescription, as does penicillin (it says here).

The CARTOON section of Collier's Magazine had a medical item which was cut out for us by a patient. It portrays the intense, thoughtless interest of a physician in a 'hot' medical problem, but to the startled concern of his patient. . . . A scientific-dressed medico is shown, talking on the telephone, while a puny victim stands by, dressed in shorts, shirt, and a worried frown. . . . The phone message reads, — "Hello, Bill. Do you want a real hair-raising feature for next month's medical journal?"

Reports of the 'STOMACH TUBELESS' method of testing for GASTRIC acidity have not been common since first mentioned last year, (given by mouth as "Diagnex' and tested for in the urine as liberated quinine). . . . A report from Washington, by the second-best medical journal in the U.S., (Med. Annals of the D. of C.) presents three findings,—1. Correlation between tube and tubeless tests is higher than 85%, and the tubeless may be more sensitive. 2. There may be a source of error from release of quinine by other intestinal secretions. 3. The test is comfortable (for the patient) and fast (for the technician). . . . They remind us that the occurrence of achlorhydria is only a bit more common than hyperchlorhydria in malignant gastric ulcer, and that achlorhydria is nearly as frequent in cases of benign ulcer.

Arizona physicians are interested in INSECT BITES, but an article with that title by the Allinghams of Oakland does not deal with the 'bites and stings' which provide our greatest problem. . . . They deal quite well with the tiny 'insanitation' bugs, but the black-widow spider is the only larger type mentioned. No scorpions, tarantulas, centipedes, etc. . . . You'll have to get along with the 6-year old summary in ARIZONA MEDICINE, plus the addendums of Prof. Stahnke of Tempe.

Drs. Jones, Robinson, and Meyer of Los Angeles have turned up with some odd conclusions in their summary of SURGERY FOR LUNG CANCER. . . . The statistics on resection are improving, but there is no increase in RESECTABILITY of the lesions seen. This is possibly a paradoxical effect of an increased usage of antibiotics; their temporarily good effects may defer an actual diagnosis. . . . If smoking is a cause of pulmonary neoplasm it hasn't yet raised the incidence in women. It may be too early for the effect, since it is supposed to require 25 years of hard smoking (not that the gals aren't trying). . . . These three surgeons believe that LOBECTOMY is legitimate, and indicated, for silent peripheral carcinomas. Their operative mortality from lobectomy was 0%, compared with 5 to 6% for pneumonectomy. The 5-year survival after lobectomy is 60%, compared with 16% after removal of a lung. This suggests that the poorer prospects needed the larger operation, but it also indicates a good fate for the better cases, plus respiratory reserve and comfort. It also powerfully argues for case-finding x-rays of men over 40.

Barden of Philadelphia is quoted by the Ohio State Medical Journal on 'HOW TO DELIVER A MEDICAL ADDRESS.' . . . Speak 10 to 20 per cent less than the time allotted. Talk in headlines, in outline form. Be simple, terse, and logical in expression. Rehearse the paper with stop-watch and wife. Leave the audience wanting more.

'SOME OTHER WORLD' department,—Did you know that there is a "new, true MENOTHERAPY"? Did you know it is called 'BLUTENE?' Did you know that Blutene is TOLONIUM CHLORIDE? Did you ever hear of Tolonium? . . . To get back on safe ground, in our plain old world, we say that the Abbott Laboratories (makers of good, old, familiar, money-making 'Nembutal') make the menotherapy. Which, in this case, is a drug to end or prevent functional uterine bleeding. . . . Tolonium chloride is not a metal, but a dye known as 'tolnidine blue O', and it has antiheparin activity.

CORRECTION

On Page 468 of Arizona Medicine, December issue a 'Medical Abstract', "Treatment of Wounds Inflicted by Rabid Animals" was published. By some error, the reference for this abstract was omitted. The paper to which it refers is "Treatment Of Wounds Inflicted By Rabid Animals"—Shaughnessy, H. J., and Zichis, J.: Bull. World Health Organization, 10:805 (1954).

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REPORT OF THE DELEGATE

Report on Actions of the House of Delegates, American Medical Association, Eighth Clinical Session, Nov. 29-Dec. 2, 1954, Miami, Florida

YOUR DELEGATE, together with our executive secretary, Mr. Robert Carpenter, attended all the sessions of the House of Delegates recently in Miami, Florida. We also arrived in time to attend the all day Public Relations Conference held the day before the opening of the Clinical Session.

This report represents a short summary of actions taken by the House of Delegates on some of the important matters brought before it. A summary of actions taken on all matters would be entirely too long for publication space, but the readers will get a complete digest of the deliberations shortly to be published in the A.M.A. Journal. Your delegate had the honor of serving on the Reference Committee on Military Affairs to which the subject of the Doctors' Draft, and other items coming under its jurisdiction, were assigned.

Geriatrics, medical ethics, internships, grievance committees, hospital accreditation, osteopathy, the doctor draft law, state subsidized medicine and malpractice insurance problems were among the major subjects of discussion and action taken by the House of Delegates.

During the meeting, the A.M.A. Board of Trustees also announced the appointment of a 13-member commission to make a comprehensive survey of the various types of plans through which the American people receive medical services. The commission, headed by Dr. Leonard W. Larson, Bismarck, N. D., member of the Board of Trustees, will begin work immediately and will require at least a year to complete its work.

Named as the 1954 General Practitioner of the Year was Dr. Karl B. Pace of Greenville, N. C., whose selection by a special committee of the Board of Trustees was announced at the opening session of the House of Delegates on Monday by Dr. Dwight B. Murray, board chairman. Dr. Walter B. Martin, president of the A.M.A., presented the medal and citation to Dr. Pace, immediately after the announcement, on the rostrum before the House of Delegates.

Other highlights of the opening session were addresses by Dr. Martin; Mr. Seaborn P. Collins, National Commander of the American Legion; Mrs. Oveta Culp Hobby, Secretary of Health Education and Welfare, and Mr. Edwin J. Faulkner, President of the Woodman Accident and Life Company of Lincoln, Neb.

Mr. Collins told the House that he is willing to appoint qualified Legion representatives on a committee to take part in joint Legion-A.M.A. study of veterans' hospitalization. Later during the meeting the Board of Trustees announced appointment of a three-man committee to meet with the Legion on the issue of veterans' medical care. The members of the A.M.A. committee are Dr. Elmer Hess, Dr. David Allman and Dr. Louis Orr.

New A.M.A. Geriatrics Unit

The House of Delegates passed a Pennsylvania resolution which directed that the A.M.A. Board of Trustees "consider the creation of an organization on geriatrics within the present structure of American Medical Association, the purpose of which shall be (1) to develop and assist committees on geriatrics and gerontology originating from constituent state associations and component county societies of the American Medical Association; (2) to act as a liaison between such state and county committees so there shall be a free flow of information between all levels of organized medicine on the subject of geriatrics; (3) to make available to the American people such facts, data and opinions concerning the subject of geriatrics as may be considered of value in alleviating social and medical problems created by the increasing population of older age groups; and (4) to perform such other duties as will improve and advance the medical care rendered to people of the older age group."

Medical Ethics

Accepting a recommendation in a report of the Council on Constitution and Bylaws, the House amended Section 7 of Chapter I of the Principles of Medical Ethics so that it now reads as follows on the subject of patents and copyrights:

"A physician may patent surgical instruments, appliances and medicines or copyright publications, methods and procedures. The use of such patents or copyrights or the receipt of

remuneration from them which retards or inhibits research or restricts the benefits derivable therefrom is unethical."

In another action involving medical ethics, the House rejected a Kansas resolution which would have removed Section 8 of Chapter I from the Principles of Medical Ethics. The Reference Committee on Miscellaneous, Business, in recommending disapproval of the resolution, said that "the American Medical Association would fail to assume a vital responsibility if no provision is included in the Principles of Medical Ethics regarding the problem of ownership of drug stores and dispensing of drugs by physicians . . . It is possible that some phases of this principle are susceptible of amendment or change, but certainly the entire principle should not be discarded."

Report on Internships

Acting on the report of the Ad Hoc Committee on Interships, the House accepted a recommendation of the Reference Committee on Medical Education and Hospitals that "the data and judgments of the Ad Hoc Committee on Internships will provide valuable guidance to the Council on Medical Education and Hospitals and with this in view it is recommended that the report be referred to the latter for their further study and guidance." Following are a few excerpts from the report of the Ad Hoc Committee on Interships:

"It is our opinion that graduates of foreign medical schools should be considered for intern appointment in approved hospitals only when there is satisfactory evidence that:

"1. Language difficulties will not seriously impair the program.

"2. The same educational standards are applied to graduates of foreign schools as to graduates of approved American medical colleges.

"3. The appropriate state licensing board approves . . .

"The Committee believes that the present standards detailing only the number of annual admissions, autopsy rate, number of beds and assignment of an intern to from 15 to 25 beds, are without significant meaning unless and until every local situation is reviewed 'on the grounds' and with full opportunity for discussion between the representative of the accrediting body and representatives of the hospital's governing board and its medical staff . . .

"Had the 'two-thirds rule' remained a requirement and been rigidly applied to the two consecutive intern years 1952-3 in combination with 1953-4 it would have removed 448 hospitals, cancelled 4,205 internships to which 784 students were matched in those years and reduced the number of internships available to 6,766 . . .

"The committee suggests consideration of some requirements based on filling a percentage of approved internships and a time limit to eliminate some of the unhealthy aspects of the present situation. The following requirement is recommended: Any internship program which in two successive years does not obtain one-fourth of its stated intern complement be disapproved for internship training.

"As applied to the figures for 1952-3 in combination with 1953-4, this requirement would have removed 277 hospitals, cancelled 2,139 internships to which 80 students were matched in those years and reduced the number of internships available to 8,832."

Grievance Committees

In order to improve efficiency and maintain high standards in the operation of grievance or mediation committees, the House endorsed the principles of two similar resolutions introduced by the Colorado and Mississippi delegations and asked the Board of Trustees to appoint a committee to study and report on recommended standards for the operation of such services. Both resolutions had emphasized the valuable public service aspects of grievance committees and had suggested that the committee appointed by the Board of Trustees be composed of representatives from constituent societies in which grievance committees have been effective and useful.

Hospital Accreditation

In place of an Indiana resolution protesting certain situations arising in connection with hospital inspections, the House adopted the following substitute resolution to resolve the problems in question:

"Resolved, that the Secretary of the American Medical Association be directed to request that the Joint Commission on the Accreditation of Hospitals supply a copy of the letter of notification regarding the results of the survey of each hospital to the Hospital Administrator, to the Chief of the Professional Staff and to the Chairman of the Governing Board of the hospital."

Osteopathy

The House concurred in the following supplementary report of the Board of Trustees on the osteopathic situation:

"Contingent on the receipt of the report from the Committee to Study the Relations Between Osteopathy and Medicine of its 'on campus' observations of osteopathic schools, the House of Delegates in June, 1954, agreed to hold in abeyance any action on this important subject until this meeting.

"The Committee, after meetings and extensive negotiations with the American Osteopathis Association, has now made final arrangements for visiting five of the six schools of osteopathy, and these plans have been approved by the Board of Trustees.

"It is the recommendation of the Board, therefore, that consideration of this matter be held in abeyance by the House of Delegates until the June, 1955, meeting, at which time the Committee expects to have a complete report of its findings concerning the nature, scope and quality of education in schools of osteopathy."

The Doctor Draft Law

The Reference Committee on Medical Military Affairs considered several reports and resolutions involving the doctor draft law, and then proposed the following statement which was adopted by the House of Delegates:

"(A) That on the basis of current information the House of Delegates commend and express itself as being in complete accord with the Board of Trustees and its Council on National Defense that the 'Doctor Draft Law' should not be extended after June 30, 1955, and that the House of Delegates further express its confidence in the ability of the Board of Trustees and its Council on National Defense to properly handle any new situation which may develop in regard to this highly complex and involved problem.

"(B) That the Board of Trustees and its Council on National Defense continue to study the problem of providing the best possible medical service for members of the armed forces and that they make recommendations to the Department of Defense at the earliest possible time for a more permanent solution to the problem, giving special attention to the further development of a career medical corps with adequate compensation therefor."

State-Subsidized Medicine

Most controversial issue at the Miami meeting was a resolution on "Policy on Medical Practice by Tax Supported Medical Schools," introduced by the Mississippi State Medical Association. This resolution provided that:

"The American Medical Association reaffirm its unalterable opposition to socialized and state subsidized medicine regardlesss of the form which it may assume, and

"The House of Delegates of the American Medical Association is of the opinion that these principles should be considered by constituent and component medical societies together with all other facts pertinent to the local situation in all controverties arising in the employment of medical faculty by state (tax) supported medical schools and be fully considered in effecting action within the framework of this policy."

The Reference Committee on Medical Education and Hospitals agreed with that portion of the resolution regarding "unalterable opposition to socialized medicine" but recommended that the resolution be referred, without approval or disapproval at this time, to the Council on Medical Service which currently is studying the various aspects of this subject. The House adopted the reference committee's recommendation.

Malpractice Insurance

Two resolutions and a Board of Trustees supplementary report — all dealing with the problems and difficulties in obtaining satisfactory professional liability insurance — were considered together by the Reference Committee on Insurance and Medical Service. The House of Delegates accepted the reference committee report which said: "Inasmuch as the Board of Trustees has reported that there is in progress a study on the subject, we feel that we can well await the recommendations that the Board is planning to make at the next sessions. Due to the apparent emergency aspect of the problem, the Board of Trustees is urged to report to the membership as soon as possible, through its component societies, on the progress of this urgent study."

Opening Session

Dr. Walter B. Martin, A.M.A. President, declared at the opening session that "medicine belongs to the people" and physicians are "merely the purveyors" of medical care. Dr. Martin stressed that physicians have an obligation to

the people that "goes beyond our own private practice and into the community," and he also emphasized the importance of "continued effort to meet the medical needs of the low-income and other non-insurable groups."

Mr. Collins, the American Legion National Commander, said that "we are citizens first and doctors and veterans second," as he urged removal of the veterans' medical care issue "from the area of namecalling and propaganda." The American Legion, he declared, neither expects nor wants the government to give carte blanche entitlement to medical care to all veterans.

Mrs. Hobby, presenting the case for the Eisenhower Administration's health reinsurance proposal, said: "The health reinsurance proposal represents what we believe to be a necessity. It offers opportunity for self-help without subsidy." Mr. Faulkner, however, expressed the opinion that the reinsurance program, "would be foredoomed to disappoint its proponents," and he declared that voluntary health insurance can bring satisfactory protection "to practically all of our people" without a Federal reinsurance program.

Awards and Contributions

At the closing session of the House of Delegates the American Medical Association received a citation for pioneering in helping to bring educational television to the American public. James Keller, chairman of the Miami Citizens Committee for Educational Television, presented the award on behalf of the National Citizens Committee for Educational Television. Dr. Martin accepted the citation for the A.M.A.

At the same session the Utah State Medical Society, represented by Dr. George M. Fister of Ogden, presented a check for $10,355 to the American Medical Education Foundation to aid in relieving the financial plight of the nation's medical schools. The contribution was received by Dr. Louis H. Bauer, president of the foundation, who also announced that a check for $1,000 had been contributed by the Southern Medical Association.

1957 Clinical Meeting

Philadelphia was chosen as the place for the 1957 Clinicial Meeting, the dates of which will be announced later. Invitations also had been received from Denver, Detroit, Mexico City and Washington, D.C. The Clinical Meeting will be held in Boston in 1955 and in Seattle in 1956.

Respectfully submitted,
J. D. Hamer, M.D.
Delegate

Relax the best way
... pause for Coke



Time out for refreshment

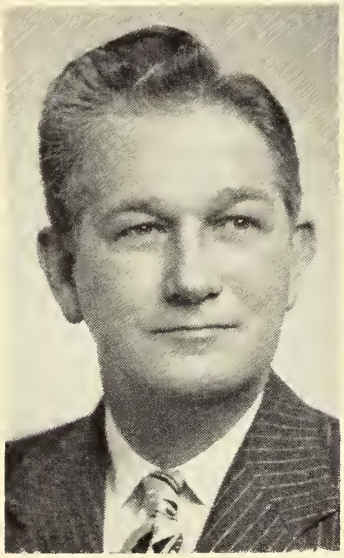
DRINK Coca-Cola REG. U.S. PAT. OFF.



ANNUAL MEETING— SCIENTIFIC SESSIONS

THE 64th Annual Meeting of your Association will be held in Tucson, May 4-7, 1955, with headquarters at El Conquistador Hotel. Through arrangements made by the Scientific Assembly Committee, we are happy to announce participation of the following two guest orators who will appear with others on the scientific sessions program.

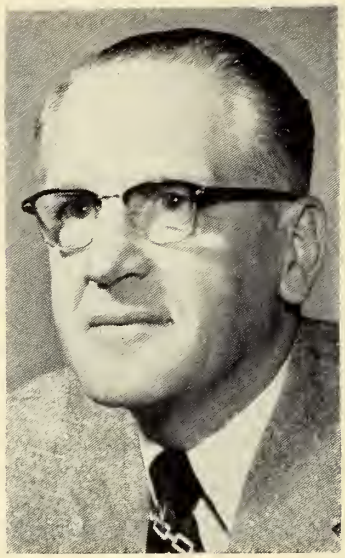
S. F. HAMPTON, M.D.



Stanley F. Hampton, M.D.
St. Louis, Missouri

Assistant Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Missouri, Doctor Stanley F. Hampton is president of the American Academy of Allergy, 1955-56; Director of the Washington University Allergy Clinic; member of the Board of Trustees of the American Foundation for Allergic Diseases; consultant in allergy to the Surgeon General of the United States Air Force; and Diplomate of the American Board of Internal Medicine and the Sub-Board of Allergy. Doctor Hampton will also be guest of the Arizona Society of Allergy.

G. C. GRIFFITH, M.D.



George Cupp Griffith, M.D.
Los Angeles, California

Graduate of the Jefferson Medical College in 1926, interning at Presbyterian Hospital, Philadelphia 1926-28, preceptee, Graduate School of Medicine, Philadelphia 1929-33, and attending Harvard Postgraduate School of Medicine 1931-33, Doctor George Cupp Griffith was assistant professor of cardiology, Graduate Hospital, Philadelphia, 1929-46; Clinical professor of medicine, University of Southern California, 1946-50; Professor of medicine, cardiology, University of Southern California, 1950 to date. During the years 1928 to 1950 he received many important appointments including the institutions Presbyterian Hospital, Graduate Hospital, Babies Hospital, Woman's Hospital, Douglas Hospital, all of Philadelphia; Home for Incurables, Philadelphia; Los Angeles County Hospital, Birmingham VA Hospital, San Antonio Community Hospital, Good Hope Hospital Association, St. Luke Hospital, Long Beach VA Hospital, Huntington Memorial Hospital, Good Samaritan Hospital, all of California; Trustee, Juniata College, Huntington, Pennsylvania; Medical advisor to the Pennsylvania Railroad; Civilian expert to the Surgeon General, McCornack Hospital, California; Consultant in Rheumatic Fever, Board of Public Health, State of California; Consultant, State of California Department of Public Education, Bureau of Rehabilitation; Member of the Board of Consultant Editors, Journal of Insurance Medicine; Chairman of the Health and Hospital Committee, Pasadena Chamber of Commerce; President, California Heart Association; and member of the Editorial Board of the Journal of American Geriatrics Society. Doctor Griffith is also a member of a large number of medical societies and associations.

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ELECTRON PHOTOMICROGRAPH

Diplococcus pneumoniae 44,000 X

Diplococcus pneumoniae (Streptococcus pneumoniae) is a Gram-positive organism commonly involved in

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Organization PAGE

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

THE AMERICAN NATIONAL RED CROSS, Pacific Area Office, 1550 Sutter Street, San Francisco 1, California, Maricopa County Chapter, 329 North 3rd Avenue, Phoenix, Arizona.

Safety instructors for swimming classes for the physically handicapped persons are available through this agency. The Maricopa County Chapter reports the scheduling of one of such programs. Swimming classes for the physically handicapped persons are being given at the Boy's Club, 1652 East Moreland on Monday and Wednesday mornings from ten to eleven A.M. Recommendation to this page from the above group is to the effect that more handicapped persons than are currently availing themselves can be accommodated.

Anyone interested in joining the classes must have their physician's permission, following which they are asked to contact their local chapter.

State-wide swimming classes for the physically handicapped, then, are a part of the American National Red Cross program. The pattern is set in Maricopa County and physicians and others of the populous areas of the state desiring such classes for their handicapped patients should contact their local Red Cross Chapter.

* * *

ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC., 207 Arizona Title Building, Phoenix, Arizona. (Easter Seal Society)

State laws provide for the education of the home-bound child and, at the election of the Boards of Education of the high schools in the state, for the education of the home-bound high school youth. The Easter Seal Society recognizing the added particular needs of these students in the Phoenix area has manned the Samuel Gompers Memorial Easter Seal Clinic.

The Samuel Gompers Memorial Easter Seal Clinic located at 7211 North 7th Street is contained in a building where floor space approximates 7,000 square feet. This building was built by the men and women of the American Federation of Labor and is owned by the Maricopa County Society for Crippled Children and Adults, Inc. Education and therapeutic care is under their direction with delegated authority of the educational program given by the Public School system and conducted by the director of the clinic.

The clinic is interested in all types of physically handicapped persons where therapeutic treatment can lead to improvement and added independence. As an example of the diversity of the program, the clinic is now serving individuals who are cerebral palsy, post-polio, muscular dystrophy, multiple sclerosis and congenital handicap cases. It is the policy of the clinic and of those who are the professional members of the staff to give the best service that they can within the limits of their capabilities to all physically handicapped people. It may be that much can be done or it may be that the prognosis for the future is not bright. Whatever the case may be, an honest and thorough evaluation will be made of each case referred to the clinic and in-patient or out-patient treatment will be given or recommendations for home training in therapy will be provided.

The therapy areas include a program of physical rehabilitation in physical therapy, speech therapy, and manual arts therapy. All areas are under the direction of the clinic and all therapy is given as directed by examination and referrals of members of the medical profession. Out-patient clinics are held regularly and referrals for evaluation and possible therapeutic treatment are made at that time. Referrals can be made to the clinic by any qualified physician or by any qualified agency where treatment of a particular case is deemed to be necessary.

Admission to the clinic is decided after a complete evaluation of the patient has been realized. This includes the medical evaluation, evaluations by the physical therapist, the manual arts therapist and the speech therapist as well as the psychologist and the educational system. Following the examinations, admittance of the individual for either in-patient or out-patient treatment is decided upon by an admissions

committee made up of the professional staff of the clinic.

In all instances therapeutic treatment is carried over to the school program and also into the home situation. This is true for all patients whether they are in the school program or are seen only on an out-patient basis.

In many instances the handicapped individual may come in for an evaluation and recommended home care or treatment. In this way many more handicapped children or adults can be seen and by periodic returns to the clinic for a check on the progress of the individual the home treatment can be guided and help can be given to many where they might otherwise receive no therapeutic care whatsoever.

State-wide referrals will be given as much consideration as time, facilities and scheduling permit. Any questions regarding provisions, policy, or facilities may be directed to David B. Ray, Executive Director of the Arizona Society for Crippled Children and Adults, 208 Arizona Title Building, or to Dr. LeRoy Larson, Ph.D., Director, Samuel Gompers Memorial Easter Seal Clinic, 7211 North 7th Street, Phoenix, Arizona.

* * *

UNITED CEREBRAL PALSY ASSOCIATION OF CENTRAL ARIZONA, INC., 718 Security Building, Phoenix, Arizona.

"SPECIALIZED EQUIPMENT GRANT MADE TO ST. JOSEPH'S HOSPITAL". Apparatus specifically designed for the Cerebral Palsied is being delivered to St. Joseph's Hospital Department of Physical Medicine and Rehabilitation through a special grant of funds approved by the executive committee of the Central Arizona United Cerebral Palsy Association at its meeting November 30 in the Kiva Club, announced the president, Fred N. Porter, Jr.

Included in the equipment which will be publicly presented on delivery are an adjustable crawler, foot placement ladder, adjustable relaxation chair with attachments, standing table, gait training skis, as well as children's parallel bars and a child size walker. Total cost of the equipment will be in the neighborhood of $400.

SPEECH SURVEY BEING CONDUCTED AT VALLEY OF THE SUN SCHOOL, Miss Sharon Heins, speech consultant, who recently moved to the Phoenix area, is conducting a speech evaluation survey at the Valley of the Sun School for Handicapped Children, under the auspices of the United Cerebral Palsy Association of Central Arizona.

The evaluation will be carried out in each individual case of a Cerebral Palsied Child to not only determine present speech and hearing abilities or disabilities, but will also serve as a guide to future treatment possibilities and estimated costs involved.

Stimulated by United Cerebral Palsy's initial survey, the School is also conducting speech surveys through Miss Heins of other children not falling in the Cerebral Palsy categories. Funds for these additional evaluations will come from other agencies, as well as civic, fraternal and social groups.

Valley of the Sun School presently has an enrollment of eighteen Cerebral Palsy children, and if their building campaign is successful, facilities should be expanded to enable double the present number. Special equipment for the Cerebral Palsied has been donated in the past by United Cerebral Palsy of Central Arizona.

Should Miss Heins' survey indicate substantial need for speech therapy, United Cerebral Palsy Association plans to employ her services in that direction on a fee-treatment basis for the children. Her services will also be available for the ambulatory out-patient children who can be referred to the Valley of the Sun School for treatment.

* * *

"To what purpose other than salaries is my charity dollar put by your agency?"

The explanation as to the percentage of distribution of funds at the National, State, and local level has not answered this question. This page for this month points out results of the volunteer service agency dollar in local areas.

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ARIZONA *Pharmaceutical* PAGE

KILL A MONSTER AND CREATE A MENACE

By Joseph A. Zapotocky, Ph.D. College of Pharmacy, University of Arizona

THIS may serve as a grotesque explanation of the side action of some of our modern therapeutic agents.

Life on earth is a complex system of checks and balances. Other than the usual environmental factors, one organism may keep another from becoming too abundant. Bacteria, fungi, insects, and higher animals all tend to curb the activities of one another. Therefore, it is not surprising, when something happens to destroy the pattern of balance, one group may flourish until some means is found to bring it under control.

Antibiotics have tamed many of our killer diseases. Since the discovery of penicillin, antibiotic after antibiotic has been put on the market, each considered to have a certain range of action and advantages over some preceding discovery. Idiosyncrasies have also become more prevalent. The development of bacterial resistance has become more common. The incidence of resistance seems to increase with the greater use and popularity of each antibiotic. The incidence of bacterial resistance to penicillin is very high today.

The antagonism and synergism of antibiotics, and the cross resistance of organisms to antibiotics have been studied in some detail. Although there appears to be some pattern of activity, there are a sufficient number of variations to make relying on a set pattern dangerous. No set rule can be followed safely.

An unusual development in antibiotic therapy is the problem of the overgrowth of one class of organisms when another group is suppressed. A similar problem is met as a result of the widespread use of insecticides. The spraying of large areas with an insecticide brings about the destruction of a number of susceptible pests. Invariably this followed by an overgrowth of the pests which were held in check by the presence of the destroyed group. A new problem of control develops. The occurrence of similar problems following antibiotic therapy is becoming more prevalent. The overgrowth of fungi following destruction of bacteria has resulted in the need for simultaneous administration of methyl and propyl parahydroxybenzoates with some antibiotics. The overgrowth of micrococci following the administration of broad spectrum antibiotics may necessitate the use of a second antibiotic. The use of a predominantly gram positive killer such as penicillin may cause the bacterial flora to become mostly gram negative. More serious infections of internal organs are resulting from organisms which usually infected only the oral cavity of the respiratory organs. Likewise, these areas are becoming infected with organisms which previously localized in the intestines. Vitamin B deficiencies are known to occur from the destruction of organisms normally found in the body.

The selection of the proper antibiotic is becoming more complex. The choice should not be left to chance. A poor selection may cause the development of organisms more resistant to future treatment by the proper agent because the initial treatment may have served to act as a growth stimulant. Strains of organisms vary in their susceptibility to antibiotics. Unless a preliminary sensitivity test is carried out beforehand, the correct choice may be impossible to determine. Two testing methods used today are the tube dilution and disc plate methods. The latter although considered less accurate, is cheaper and much easier to perform. Both delay the administration of the medication by 18 to 24 hours. However, when it is considered that an improper choice of an antibiotic may produce beneficial or possible deleterious results, the use of such a test seems advisable. Diagnostic test tablets are available. These can be used to determine bacterial sensitivity both qualitatively and quantitatively. Single or multiple combinations of therapeutic agents may be tested for bacterial sensitivity. The proper choice and the proper concentration of the agent can be selected. A product meeting the needs of each case can then be prepared and made available to the patient.



ELECTRON PHOTOMICROGRAPH

Salmonella paratyphi B 32,000 X

Salmonella paratyphi B (Salmonella schottmuelleri) is a

Gram-negative organism which causes

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Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

CARCINOMA OF THE BREAST. — Carl J. Antonellis, The West Va. Med. Journ. July 1954. This author stresses some points quite frequently overlooked. One of the most important is that there are two lymphatic plexuses draining the breast and these drain four ways, laterally to the axillary nodes, above to the subclavian nodes, medially to the internal mammary nodes and down into the extraperitoneal nodes. When axillary metastasis is present, **one-third** of these will have metastases to the internal mammary nodes, and will not be cured by however thorough a removal of breast and axillary tissue is carried out. In many respects this is an excellent article on a very common condition.

BERYLLIUM. We have heard of the man who could not see the forest because of the trees. In Arizona, Silicosis is very likely to hide from us the possibility of other forms of pneumonoconiosis, such as that produced by beryllium. In Industrial Medicine and Surgery for July, 1954, a group of investigators, headed by Director Joseph Shilen, report on an engineering study of ten years on "Beryllium Extraction, Reduction, and Alloy Fabrication." The section on medical findings will be found interesting. They conclude that processing of beryllium can be done with the same degree of protection as that used in processing any other metal. While beryllium poisoning has been a compensable occupational disease in Pennsylvania for three years, no claims for such compensation had been filed with the company at whose plant this study was made, up to the time of writing this report.

PAIN PROBLEMS OF THE NECK, SHOULDER GIRDLE, AND UPPER EXTREMITY. Article by Judovich and Novel, Department of Neurology, Univ. of Penna., The Journal-Lancet, July, 1954. Few practitioners of general medicine will get through a week without seeing at least one patient, with this problem. The discussion in this article is fairly detailed and presents some new ideas, and a new effective method of administering neck traction. "A clinical concept is offered which has been found to be of value in the interpretation of the subjective and objective manifestations of somatic pain.

THE PRACTICE OF MEDICINE. British Medical Journal, July 10, 1954. This is the scholarly President's Address before the 122nd annual meeting of the British Medical Association, by Sir. John McNee, M.D., D.Sc., LL.D., F.R.C.P., F.R.F.P.S., Emeritus Regius Professor of Practice of Medicine, University of Glasgow. Attempt to epitomize this would be useless. It needs to be read in its entirety by scholarly minded seekers after literary enjoyment. Two brief quotations should arouse interest in any one who chances to read this comment. "Thus both the old study of the natural history of disease and the new scientific discoveries and methods of the past fifty years must be carefully blended for the benefit of our patients, but **in their correct order.**" There is caustic criticism of the type of doctor who, when faced with a sick patient, decides to put him on some antibiotic for three days and if he does not get well by then, to examine him.

RADIOTHERAPY FOR RODENT ULCER. Churchill-Davidson and Johnson, British Med. Journ., June 26, 1954. An interesting report on results of treatment of 711 lesions treated by radiotherapy, mainly x-ray, over a period of eleven years. A three year cure rate of 95.7% and a five year cure rate of 92.6%. Seven cases of radionecrosis resulted, one acute ascribed to idiosyncrasy; six late cases, developing from six months to three and a half years after treatment, three of which had to be excised. Radium was used in only eight cases, the remainder by varying voltages of x-ray.

THE TREATMENT OF COMPLICATIONS OF FRACTURES OF THE NECK OF THE FEMUR. Carroll B. Larson, Iowa City, Ia., Journ. of the Iowa State Med. Soc., July, 1953.

This brief and well illustrated article outlines the different methods of treating "nonunion and aseptic necrosis in intracapsular fractures."

PULMONARY TUBERCULOSIS TREATMENT, Use of Isoniazide and Iproniazide. Cohen and Ang present a rather comprehensive report and discussion of the use of these drugs on 76 patients. They conclude that iproniazide is not advocated at present in the therapy of the average case of pulmonary tuberculosis because of its toxicity. Their treatments usually extended over 90 days and worked up to 4.0 mgm. per kilo of body weight as a daily dose. The discussion is quite detailed with tabulations of results in various types of involvement. Article is found in Diseases of the Chest for June, 1954.

LOW SERUM SODIUM. Maurice B. Strauss, M.D., Prof. of Clinical Medicine, Boston University School of Medicine.

"A knowledge of the role of sodium in health and disease has become a matter of practical importance for every clinician." Read about it in The Boston Medical Quarterly, June, 1953.

RECENT TECHNICAL ADVANCES, a 2 minute Abstract

ANTI-STREPTOLYSIN-O TITRE

PRINCIPLE:

An antibody, (antistretolysin-O) is elaborated in the body by the immluno-logical response of the organism to infection by group A streptococci, and is measured by it's ability to inhibit hemolysis by the specific antigen, streptolysin.

INDICATIONS:

An aid in the diagnosis, therapy and management of Streptococcus Hemolyticus infections, and as an index of activity or progress of Acute Rheumatic Fever, Endocarditis, or Glomerulonephritis.

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Titres below 50 todd units are not considered significant. Titres above 50 units are evidence of present or recent past streptococcic infection and should be checked at bi-weekly intervals to show increase or regression.

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RADIOISOTOPES

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Seymour B. Silverman, M.D.



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Notes from the EDITORS PEN

ANNUAL MEETINGS

64th Annual Meeting of YOUR Association will be held in Tucson, May 4 through 7, 1955, at Hotel El Conquistador. Make reservations NOW by writing direct to the hotel and plan to attend.

Annual meeting of the American Medical Association will be held in Atlantic City, New Jersey, June 6 through 10, 1955.

AMERICAN MEDICAL EDUCATION FOUNDATION

As of November 1, 1954, the AMEF has received 15,800 contributions totaling $1,023,313.26, compared with 15,414 gifts totaling $960,859 during the same period in 1953. Grants of the National Fund for Medical Education disbursed to the nation's 80 approved medical schools in July, 1954, totaled $2,176,904.71. Of this total, the medical profession provided $1,101,578.31 through AMEF.

The Fourth Annual Meeting of AMEF state chairmen is scheduled to be held in Chicago, Sunday, January 23, 1955. Our chairman, Doctor Harold W. Kohl of Tucson, plans to attend.

19TH EDITION — AMA MEDICAL DIRECTORY

The new, 19th Edition, AMERICAN MEDICAL DIRECTORY is now in galley form, and it is expected that the book will be ready for delivery by the American Medical Association about the middle of 1955. Most important to each of us is the prompt mailing to AMA of the **Directory Information Card** previously forwarded to each medical doctor. Needless to say, this Directory has wide circulation and daily use by all medical interests. It is the "WHO'S WHO" listing of our profession. It behooves each of us to see to it that the listing is correct in every detail and as we, individually, wish the record to indicate. Supplying the information requested by card will eliminate all future criticism. AMA wants to do a perfect job. Your cooperation to this end will assure its success. MAIL YOUR CARD TODAY, if you have not already done so.

MEDICAL STATISTICS

(1) Medical fees have not risen as fast as the consumer's price index. (2) Personal consumer's expenditures for medical care continue to be a little more than four per cent of all family personal consumer expenditures. (3) Physicians' incomes on the average have increased since 1929 at almost precisely the same percentage rate as the incomes of all gainfully employed people, their patients. (4) An estimate of the full cost of medical education training is 35 to 50 thousand dollars.

KNOW YOUR DELEGATES

Members of the House of Delegates of your Association are composed of delegates elected by each of the fourteen component county medical societies. During December and January most societies will have completed such elections. The House of Delegates and Council represent the "voice" in the administration of the affairs of your Association. KNOW YOUR DELEGATES and express your views to them in order that they may be guided by your wishes during the forthcoming 64th Annual Meeting of The Arizona Medical Association, Inc., in Tucson, with headquarters at El Conquistador, May 4 through 7, 1955.

CIVIL DEFENSE

The Federal Civil Defense Administration now has medical supplies valued at $91 million delivered to sixteen warehouses strategically located across the country. An additional $39 million is on order.

An improvised hospital, an adaptation of the Mobile Army Surgical Hospital unit used in Korea, possibly is the most significant advance. For federal reserve, 731 such units are in line for procurement. A total of 93 are on order, states providing one-half the cost. Present planning calls for 6000, states procuring 1000 and the balance for federal reserve.

A ten day course on "Medical Care of Atomic Casualties" is being scheduled at the Army Medical Service Graduate School (Walter Reed Army Medical Center), Washington, D. C., January 10-19, 1955 and March 7-16, 1955. The course is free, travel and lodging expenses to be borne by attendant. Physician participation invited.

RADIOLOGICAL SOCIETY MEETING

The 42nd annual meeting of the Texas Radiological Society will be held in Houston, Texas, Friday and Saturday, January 21-22, 1955, with headquarters at the Shamrock Hotel. Guest speakers will include: Philip J. Hodes, M. D. of Philadelphia; Thomas A. Watson, M. B., Ch. B., D. M. R. of Saskatoon, Saskatchewan, Dominion of Canada; Henry G. Moehring, M. D. of Duluth; William B. Seaman, M. D. of St. Louis; and Richard Schatzki, M. D. of Belmont Massachusetts.

DO YOU KNOW?

That the 80 medical schools in the United States will operate on a budget of approximately $93.408,312 during the fiscal year 1954-55.

That to operate the federal government medical, health and related activities during the fiscal

year 1954-55, approximately 25 times as much money is required, or approximately $2,141,681,661. This represents one-sixth of the total United States health bill (12 billion dollars) as estimated by the Department of Commerce.

That according to data supplied by the Veterans Administration in June, 1954, on the one-day census method, 62.4 percent were being treated for non-service-connected disabilities or 84.3 percent of the patients discharged in 1952 were non-service-connected disability cases.

THREE PHOENIX DOCTORS HONORED

Three Phoenix doctors, Howard C. Lawrence, John J. McLoone, and Alvin L. Swenson have been inducted as Fellows of the American College of Surgeons, the Maricopa County Medical Society reported.

Of the 1,100 surgeons given this distinction for 1954, Drs. Lawrence, McLoone, and Swenson were the only three from Maricopa County.

Dr. Lawrence, with offices in the Professional Building, is a graduate of the University of Michigan Medical School. He is a member of the American Society of Plastic and Reconstructive Surgery, and the American Society of Cleft Palate Rehabilitation.

He has practiced medicine in Phoenix since 1949 and is a member of the board of directors of the Maricopa County Medical Society.

Dr. McLoone, whose office is at 550 W. Thomas, is a graduate of George Washington Medical School. He is a native Phoenician and a member of the American Board of Otolaryngology. He is an eye, ear, nose, and throat specialist.

Dr. Swenson, of 1313 N. Second St., is a graduate of Harvard Medical School. He is a member both of the American Academy of Orthopedic Surgeons and the Western Orthopedic Association. He has practiced in Phoenix since 1948.

MEETING NOTICES

Twenty-sixth annual meeting Aero Medical Association March 21-23, 1955, Hotel Statler, Washington, D. C.

Conference on Reserpine In The Treatment of Neuropsychiatric, Neurological, and Related Clinical Problems. Held by the New York Academy of Sciences, Section of Biology, February 3 and 4, 1955 (Thurs. and Fri.) The Barbizon-Plaza Hotel, N. Y., N. Y.



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New King-Size

Filter Tip VICEROY

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NOT ARTHRITIS BUT ARTHRALGIA...

If the patient complaining of aching joints is a woman between 37 and 54 years of age, it is highly possible that she is suffering from arthralgia rather than arthritis.[1] It has been estimated that arthralgia occurs in about 40 per cent of women with estrogen deficiency, and is exceeded in frequency only by symptoms of emotional or vasomotor origin.[2] In fact, arthralgia may be as indicative of declining ovarian function as the classic menopausal hot flushes.

Arthralgia, however, is just one of a vast number of distressing but ill-defined symptoms that may be precipitated by the loss of estrogen as a "metabolic regulator." Other good examples are insomnia, headache, easy fatigability, and tachypnea.

Because these symptoms sometimes occur years before or even long after cessation of menstruation, they are not always readily associated with estrogen deficiency, and the tendency may be to treat them with medications other than estrogen. Obviously, sedatives and other palliatives cannot be expected to produce a satisfactory response if an estrogen deficiency exists. Only estrogen replacement therapy will correct the basic cause of the disorder.

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1. Greenblatt, R. B., and Kupperman, H. S.: M. Clin. North America *30*:576 (May) 1946. 2. McGavack, T. H., in Goldzieher, M. A., and Goldzieher, J. W.: Endocrine Treatment in General Practice, New York, Springer Publishing Company, Inc., 1953, p. 225.

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Woman's AUXILIARY



Mrs. Roy Hewitt
Tucson, Arizona

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION ELEVENTH ANNUAL CONFERENCE

THE Eleventh Annual Conference of State Presidents and Presidents-elect was held November 16, 17 and 18, 1954, at the Drake Hotel in Chicago, with representatives from forty-six states present. The Arizona Auxiliary was represented by State President Mrs. Brick Storts, National Historian Mrs. Jesse Hamer, and State President-elect Mrs. Roy Hewitt.

Mrs. George Turner of El Paso, National President, opened the conference with words of welcome. National board members, past national presidents and the president of the Southern Medical Auxiliary were introduced. President-elect Mrs. Mason G. Lawson, the presiding officer, in her opening speech explained the theme of the conference, *Leadership in Community Health.* For thirty years the auxiliary has been preparing members for leadership in every field pertaining to community health. It is our obligation as doctors' wives, she said, to be leaders in our own community. In this way we help to further good public relations between the medical profession and the community. Mrs. Lawson also pointed out that this conference was a workshop, helping members to be better informed about the program and policies of all phases of auxiliary work, and providing an exchange of ideas from all state auxiliaries.

Mrs. Turner, in her president's report, urged members to participate in the following national health projects:

I. *National Foundation for Infantile Paralysis.* Over 1,830,000 children participated in the University of Michigan's study of the Salk polio vaccine test in 1954. If the vaccine is to be licensed in the spring of 1955, a long-term, intensive program of public education must be developed to expedite its application and use. The National Foundation has arranged for production of enough vaccine to assure the availability next spring of 9,000,000 vaccinations if the vaccine is proved to be effective, Mrs. Turner stated. The Foundation will supply vaccine free of charge to all individuals in the following groups:

A. All children who participated in the 1954 field trials, but who did not receive vaccine;
B. The nation's children in the first grade next spring;
C. Pregnant women.

It is essential that every group assist in this life-saving program, Mrs. Turner said.

II. *The Crusade for Freedom* sponsored by the Heritage Foundation is a name given to action by all western people, to defend and preserve the decent things of life and even to preserve life itself. The crusade has three branches, the National Committee for Free Europe, Radio Free Europe, and the American People themselves.

Mrs. Turner was one of the eleven women sent to Free Europe. These women traveled 12,626 miles, assisting in the educational aspects of the Crusade for Freedom. In Berlin, Mrs. Turner presented a CARE package in the name of The Woman's Auxiliary to the A.M.A. The American people can show by their deeds that the way of the free men is best. Auxiliaries can assist by participating in educatonal programs, by helping in fund-raising activities and by sending CARE packages to Europe.

III. *National Safety Council.* Members can participate in this health program by serving on safety council boards, by aiding educational

programs, and by promoting safety exhibits at state and county fairs.

In closing, Mrs. Turner urged all members to work on a community level, but to focus our eyes on the world, for the eyes of the world are on us.

PUBLIC RELATIONS PANEL

Several public relations programs being sponsored by the American Medical Association were explained by Dr. Ernest B. Howard, Assistant Secretary to the A.M.A. Hope was expressed that a "Public Opinion Survey" would soon be approved by the Board of Trustees. What the attitude of the American public is toward their country, state and national societies and toward their private physician, is very important. The Doctors should know what America is thinking.

A project to develop closed television programs to doctors and medical students is a new procedure in post-graduate study, Dr. Howard stated. This project is only in the talking stage as yet. A live T.V. program "The Doctor Answers" is conducted in Chicago every day by Dr. Bauer. Ciba Laboratory sponsors a T.V. show in medical research, which has nation-wide coverage in institutional teaching.

Dr. Howard said that twenty-six articles of preventive medicine approved by the A.M.A. have been published in the magazine *This Week*.

Program Panel

"A Family Doctor for Every Doctor's Family" is a program sponsored in several states. Too many doctors today are lost because of preventable illness. Although industrial groups have yearly checkups, many doctors' families go without medical care.

Traffic and home safety programs are vital to the Auxiliary. Last year there were ninety-eight thousand accidental deaths. Of these casualties twenty-eight thousand were in the home. Between thirty and fifty thousand children each year are crippled or handicapped in some way. Auxiliary members can help educate communities by arranging for special safety programs to be given, emphasizing the following three basic principles of home safety. Make home conditions safe, avoid unnecessary dangers and observe the laws and ordinances explicitly.

Members were urged to organize baby-sitting clinics in every community. Special instruction in child care should be given, such as child handling, bathing and dressing, as well as child feeding. In many high schools, clubs have been organized for giving this instruction. It was recommended that study groups should include teen-agers, older women, and new grandmothers.

Dr. W. W. Bauer, Director, Bureau of Health Education, complimented the Woman's Auxiliary on their participation in the school health programs. He stated the school health programs were established in 1911 by the American Medical Association in conjunction with the National Educational Association. There was also an increasing wave of interest in the health of the school age child during the year 1945-46, resulting in establishment of educational clinics throughout the United States.

Mr. Thomas Hendricks, Secretary of the Council on Medical Service, A.M.A., spoke on *The Essentials of Excellence*. He emphasized the fact that medical service is the product we have to sell, and that the art of public relations is based upon how well the product is sold. Leadership in community health through community team spirit is the key to the best health programs he maintained. Ignorance in action is the most tragic thing in the world, he declared. In order to reach the standard of excellence in selling the idea of medical service to the public, we must be informed.

ORGANIZATION PANEL

Mrs. Robert Flanders, First Vice-President and Chairman, Organization Committee, conducted this panel. Every auxiliary member should feel that she is a member of the organization committee. In order to get new members everyone needs to be enthusiastic, to make personal contacts, and to provide a varied and interesting program. After all, organization is the foundation of the Woman's Auxiliary to the American Medical Association, Mrs. Flanders maintained.

Although Arizona has no medical school, members might be interested to know that medical students had organized the Student American Medical Association. This association is four years old, they edit their own journal, and are self-supporting. Many schools have auxiliaries to this association, it was added.

PUBLICATIONS

Education is the primary objective in publications. Members need to have authentic information and to know the principles for which the Auxiliary stands, in order to be leaders in community health. A study of the *Bulletin* prepares

members for such leadership. The Auxiliary is a national organization. The *Bulletin* is the official magazine.

The American Medical Association spends thousands of dollars sending publications to the doctors to keep them informed and up-to-date in policies. Some of these publications are "The Secretary's Letter", "The Washington Letter", (legislation), The *A.M.A. Journal* and the specialty journals.

Today's Health is the only authentic health magazine. It is published by the American Medical Association. The public is hungry for information about health. Use *Today's Health* for a textbook.

The National Fund for Medical Education and the American Medical Education Foundation are closely associated organizations dedicated to raising funds on a national scale from voluntary sources for the support of the medical schools. The National Fund for Medical Education secures contributions from corporations and other organized groups. The American Medical Education Foundation raises funds from individuals, physicians and medical groups. Monies raised by the Foundation are merged with those of the National Fund for distribution to medical schools. The A.M.A. approves of federal grants for construction of medical schools and for specific research projects, but does not approve of government subsidy money for operating expenses. Such subsidies could lead to government control of all medical education. The A.M.E.F. needs two million dollars this year to carry out this support for medical schools. Last year the Woman's Auxiliary to the American Medical Association gave $50,000. Members are urged as a group to surpass this figure this year. Suggestions for fund-raising projects are rummage and white elephant sales, dances and bazaars. The use of memorial cards should be encouraged among the membership. Choose a project and work on it. It's up to every member.

The *World Medical Association* was organized in 1947 to represent the practicing medical and allied professions throughout the world. Its aims are to raise the standards of medical education and public health, and to help to improve industrial and occupational health programs in all countries. The World Medical Association is also the spokesman of the medical profession at meetings of international organizations, such as the United Nations, which ordinarily receive only opinions of governments. Today the World Association comprises forty-six national associations. As established, the Association receives dues paid by member associations. By 1948, when headquarters were established in the United States, it became obvious that funds from this source would be insufficient. The United States Committee is responsible for the support of the headquarters, and for certain expenses of the Council. Individual memberships in this committee are available at $10.00. No one group or individual can represent American medicine except the World Medical Association. Therefore membership should be encouraged on a local level, it was stated.

Public Relations Panel

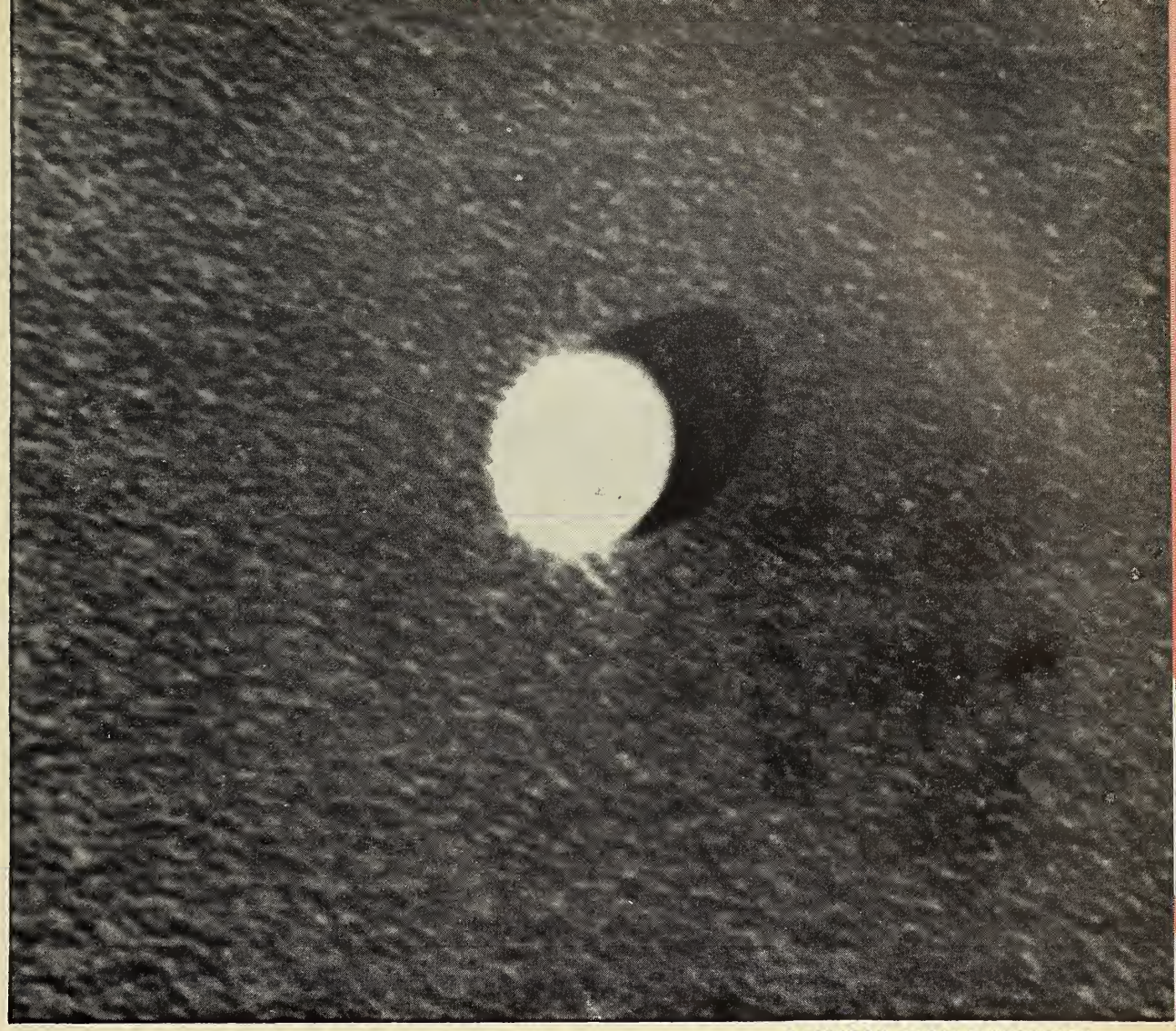
According to Mr. Leo Brown, Director of Public Relations, A.M.A., health forums are an excellent way of furthering good public relations in the community. These forums must first be approved by the county or state medical society. The auxiliaries must not take the initiative, he stated.

Auxiliary members can aid the doctors by interesting other groups in participating in this project by suggesting good moderators for T.V. health shows, and by taking charge of the placement service for the speakers' bureau.

The cooperation of local daily papers aids in the promotion and advertising of the health forum. In contacting the physicians, the press becomes better acquainted with the doctors' problems and better informed on the subjects under discussion. Because these forums are straight health ventures, advertising in newspapers, on the radio and on television is given the approval of the American Medical Association. The health forum functions as a major health service.

Mr. Aubry Gates, Field Director of Rural Health, urged members to work together with home demonstration agents and 4-H clubs in educating rural people in medical care. Inform rural people what health facilities are available and how to use them to the best advantage. Urge them to have a family physician and to have an annual checkup. One of the great problems of farm people is heart disease caused by overweight. Courses in nutrition can guide and encourage these people. Since each community has different problems, programs should be on a local level.

The Legislative Panel conducted by Mrs.



ELECTRON PHOTOMICROGRAPH

Staphylococcus aureus 44,000 X

Staphylococcus aureus (Micrococcus pyogenes var. aureus) is a Gram-positive organism commonly involved in a great variety of pathologic conditions, including

pyoderma • abscesses • empyema • otitis • sinusitis • septicemia

bronchopneumonia • bronchiectasis • tracheobronchitis • and food poisoning.

It is another of the more than 30 organisms susceptible to

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Charles L. Goodhand, National Chairman, furnished one of the most interesting discussions at the conference.

The Health Reinsurance proposal which was defeated in the last session of Congress, will surely be resubmitted this year. The A.M.A. opposes reinsurance on the grounds that voluntary health insurance is still growing at a phenominal rate without government intervention. The need for such intervention had not been shown, and the bill did nothing to help individuals, not insurable, at this time.

Use of study groups is thought to be the most effective in educating the community in States and National legislation. If auxiliary members are informed about health legislation, we can then discuss it intelligently in our social contacts.

Mr. Joseph Stedler, Director of the A.M.A. law department, stated that during the two sessions of the 83rd Congress, there were 16,000 bills and resolutions introduced, and out of these 5,000 were enacted into law. Four hundred and seventy-five of these bills were of interest to the medical profession; three-hundred and fifty of these were studied by the A.M.A. committee on legislation in Washington. There were nineteen primary health bills passed by the 83rd Congress, thirteen of which were enacted into law. The A.M.A. favored eleven of these bills opposed three, and took no action on the remaining.

Bills which will surely come before this Congress and which should be studied are: (1) The Bricker Amendment, (2) Reinsurance, (3) Social Security, (4) Veterans' affairs, and (5) Military Dependent Medical Care. Members should inform themselves and be ready to write or wire their congressmen in order to effectively express their opinions in the best interests of the medical profession.

Topics discussed on the *Civil Defense* panel were "Home Nursing for Defense", "Home Preparedness for Disaster", "Mass Dispersal", and "Rural America, a Vital Part of Civil Defense".

Again, auxiliary members were asked to serve as leaders in community health. The experts, of course, are the first line of defense. The Civil Defense program can be simple, but we must know how to do whatever is necessary in case of disaster. Prevention is the best known tool. Members were urged to have closer coordination between state and national chairmen.

Mental Health Panel

Mrs. Brick Storts participated on this panel by giving a two-minute talk on Juvenile Delinquency. She pointed out that the delinquency of these misguided young people was the result of family disorganization.

Dr. Richard Plunkett, Secretary of the Mental Health Committee of the A.M.A., spoke about the important role the teacher has in the mental hygiene of children today. The average American child has a respect for his teacher that borders on reverence. This fact places a tremendous responsibility upon the teacher. Her encouraging response makes the youngster happy, and acts as an incentive to achievement. A negative reaction on the part of the teacher brings insecurity and frustration causing the child to seek relief in misbehavior or in negative effort. The vast majority of our school teachers posses a wholesome understanding of the child, but there are some who remain indifferent, he stated.

In dealing with the many underlying factors of child growth and development, doctors face problems which may be traced to classroom difficulties, in many instances.

Parents, P.T.A. groups, and auxiliary members can play a big part in stimulating teachers toward continuous development. The profession of teaching should be made so appealing, that the guidance of children in the schools would become a privilege.

Nurse Recruitment continues to be one of the biggest projects of the Woman's Auxiliary, it was stated. Suggestions for the recruitment of nurses depend upon the community and its needs. Many nursing schools are now open to men and women for training of practical nurses. Students must be eighteen and over, and need only two years of high school credits. Clinical work, serving in children's institutions, and assisting in the home are some of the positions open for this type of nursing.

Reports on revisions to the Constitution and By-Laws, on Auxiliary Finances, on functions of the Reference Committee and on Records, will be published in the January issue of the *Bulletin.*

On the last day of the conference, a tour was made of the A.M.A. Headquarters. Two films, "*A Life to Save*" and "*Nurse Please*" were shown. Dr. George F. Lull, Secretary and General Manager of the A.M.A. offered greetings and urged members to tell the doctors at home of the many

services that are offered by their American Medical Association.

Mrs. Roy Hewitt
State President-Elect

MARICOPA COUNTY CHILD GUIDANCE CLINIC

N recognition of their work and leadership in helping establish the Maricopa County Child Guidance Clinic awards for 'distinguished public service' were presented to Mrs. Robert Cummings and Mrs. John Eisenbeiss at the December meeting of the Maricopa County Medical Society.

Members of the County Medical Society and Woman's Auxiliary along with other organizations contributed both time and money toward the establishment of the clinic which opened November 15.

A check for $28,050.00, raised mostly through the doctor's contributions, was presented to the clinic by the Auxiliary.

Both award winners have served key positions in the mental health program: Mrs. Eisenbeiss as secretary-treasurer of the Mental Health Association and secretary of the Child Guidance Clinic; Mrs. Cummings as chairman of the clinic board.

Children with mental, emotional and psychiatric problems are referred to the clinic by the juvenile court, welfare services and schools. Minimum fees are based on ability to pay, but lack of funds does not exclude a child from clinical care. Dr. Robert Barrett is directing psychiatrist.

At the request of the Community Council, a committee headed by Rabbi Krohn investigated the need for a mental health organization in Maricopa County. As a result of this survey, the Mental Health Association was formed and the Child Guidance Clinic was adopted as its first project.

Serving on the advisory board of the Child Guidance Clinic are Mr. Keith Perkins, Dr. Thorton E. Pfeil, Dr. Derrill Manley, and Dr. Otto Bendheim. Members of the referral examining group are Dr. John McLoone, Dr. John S. Aiello, and Dr. Manley.

Book REVIEWS

REVIEWS of the following books will be published in the near future:

THIS PACE IS NOT KILLING US by J. I. Rodale. Rodale Press. Emmaus, Pennsylvania. 1954. Price $1.00.

WHEN MINDS GO WRONG by John Maurice Grimes, M.D. The Devin-Adair Co., New York. 1954 (Revised and enlarged from author's original edition which was privately printed in 1951.) Price $3.50.

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UNIVERSITIES ACKNOWLEDGE CONTRIBUTIONS TO A.M.E.F.

The following letters are published at request of Council for the information of the members and also as further acknowledgment of their receipt. All colleges concerned are members of the Western Regional Compact on Higher Education. Ed.

December 7, 1954

Re: Council Meeting Nov. 21, 1954

R. Lee Foster, M. D.

507 Professional Bldg.
Phoenix, Arizona
Dear Doctor Foster:

Council, at a meeting held November 21, 1954, received letters from three medical schools which are members of the Western Regional Compact on Higher Education. It was the wish of Council by motion duly made and carried unanimously, that these letters be published in Arizona Medicine Journal.

Attached please find copies of correspondence from the University of Colorado, University of Utah and the University of Oregon medical schools.

Cordially,
The Arizona Medical Association Inc.
D. W. Melick, M.D., Secretary

DWM:EJG
Enclosures

UNIVERSITY OF COLORADO
Department of Medicine
4200 East Ninth Avenue
Denver 20, Colorado
August 10, 1954

Arizona Medical Society
Phoenix
Arizona
Gentlemen:

I was pleased indeed to learn from a report of the American Medical Education Foundation that you have designated the University of Colorado School of Medicine as the recipient of your contribution to the Foundation.

We are very appreciative of your interest in the School of Medicine as evinced by this support, and we extend to you our sincere thanks.

Sincerely yours,
A. R. Buchanan, M.D.
ARB:bw Assistant Dean

UNIVERSITY OF UTAH
College of Medicine Salt Lake City
August 24, 1954

Oscar W. Thoeny, President,
Arizona Medical Association
c/o D. W. Melick, Secretary
541 Security Building
Phoenix, Arizona
Dear President Thoeny:

I wish to express to you the deep appreciation of this College of Medicine for the helpful contribution of the Arizona Medical Association to our program. I know that you share my feelings that the preparation of well-trained physicians is a most important part of our national program, and at this date the great restriction lies in the funds for such programs.

The fact that the money which you have given through the American Medical Education Foundation is without a designating label for the type of expense, makes it particularly helpful. Our funds from the State must be specifically designated at the beginning of the year and so-called "fluid funds" are badly needed.

I understand also that in this contribution, you are endeavoring to strengthen regional aspects of medical education. You may be interested to know that in the past three years, this Medical School has been increasingly interested in the admission of students from Arizona and we hope that in the future, the number will grow steadily.

With all good wishes,

Yours Sincerely,
John Z. Bowers, M. D.
JZB:Jmt Dean

UNIVERSITY OF OREGON MEDICAL SCHOOL
Portland 1, Oregon
Office of the Dean
August 25, 1954

Dr. Oscar W. Thoeny, President
Arizona Medical Association, Inc.
1313 N. Second Street
Phoenix, Arizona
Dear Doctor Thoeny:

In the absence of Dean Baird, who is on vacation, I am writing to express our sincere appreciation for the grant which you have made to the American Medical Education Foundation and which has been earmarked for the University of Oregon Medical School. We consider this to be an extremely generous action on the part of the Arizona Medical Association, and indicates that your Association is anxious to help in meeting the financial problems faced by the medical schools of this area.

We would appreciate it if you would convey our thanks to the members of the Association.

You will be interested to know that this fall we are accepting one student from Arizona under the Western Regional Pact for Higher Education. We hope that in the future it will be possible to admit additional students from Arizona.

Very truly yours,
W. A. Zimmerman
WAZ:bc Assistant to the Dean



ELECTRON PHOTOMICROGRAPH

Streptococcus faecalis 40,000 X

Streptococcus faecalis is a Gram-positive organism commonly involved in a variety of pathologic conditions, including urinary tract infections • subacute bacterial endocarditis • peritonitis.

It is another of the more than 30 organisms susceptible to

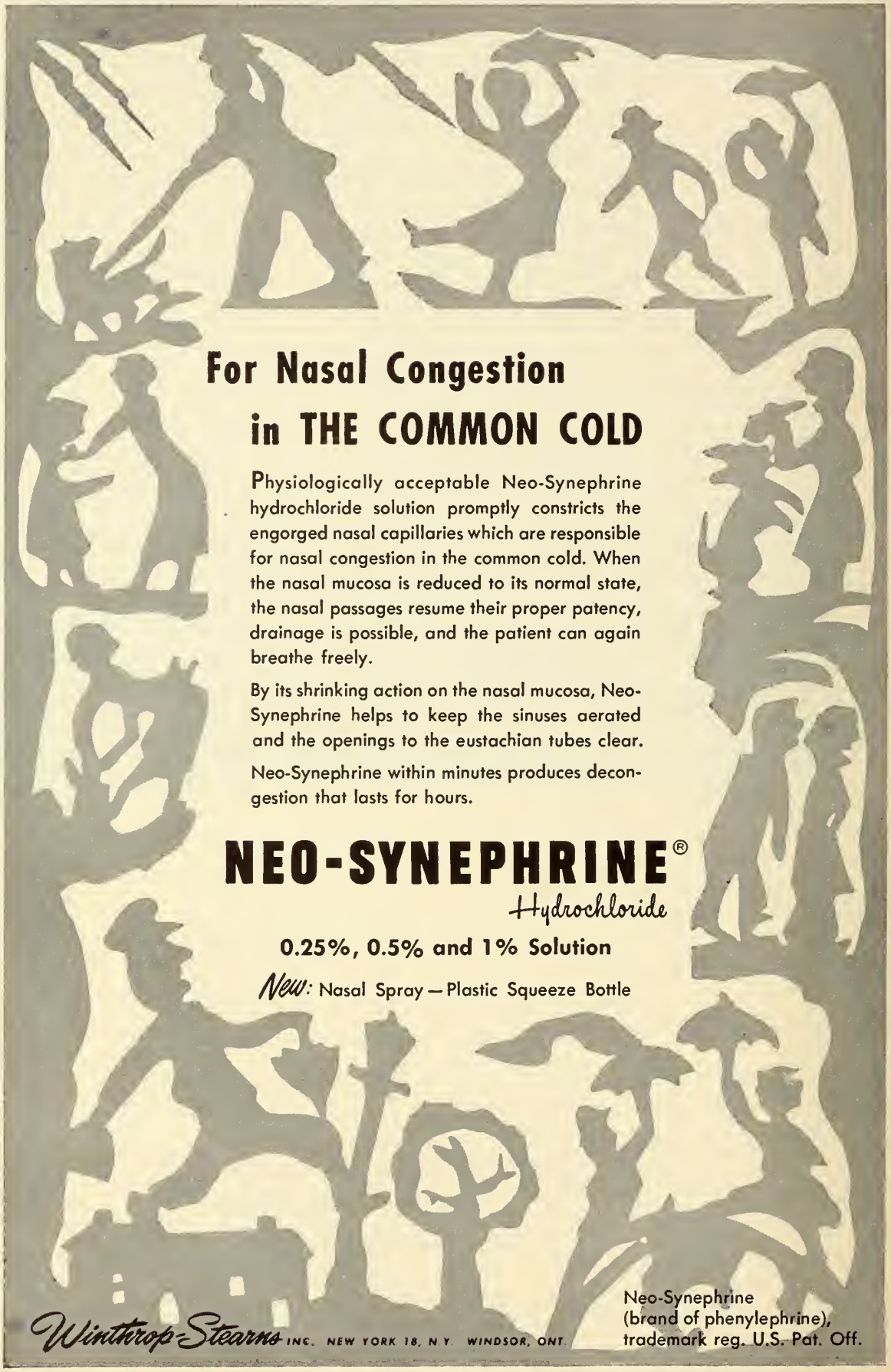
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in THE COMMON COLD
Physiologically acceptable Neo-Synephrine hydrochloride solution promptly constricts the engorged nasal capillaries which are responsible for nasal congestion in the common cold. When the nasal mucosa is reduced to its normal state, the nasal passages resume their proper patency, drainage is possible, and the patient can again breathe freely.
By its shrinking action on the nasal mucosa, Neo-Synephrine helps to keep the sinuses aerated and the openings to the eustachian tubes clear.
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ARIZONA MEDICINE

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VOL. 12, NO. 2 FEBRUARY, 1955

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ARIZONA MEDICINE
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Original ARTICLES

THE ACUTE SURGICAL ABDOMEN*

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IN thinking over ways of making this rather hackneyed but certainly practical subject interesting the most profound and severe critics of all surgeons were asked namely, the County Hospital residents, what they thought would be the most valuable. Their advice was that the discussions presented to them wherein the essayist: are the usual routine manifestations of disease, which they all were expected to know anyway, provided little that was stimulating; but the discussions which gave them the most pearls were the illustrative cases which were educational to the surgeon himself and therefore gave them the benefit of things he had learned the hard way.

This presentation in general will then be of those cases presenting diagnostic problems and problems of management which were educational to the surgeons involved.

In reviewing our surgical services at the County Hospital during the past six months it was noted that in 109 appendectomies 15 per cent revealed no pathology as far as the Pathologist could see it. Even as routine a disease as appendicitis can prove a problem and like golf be a humbling game. We could on the other hand approach it the other way and be proud of the fact that 85 per cent of the time the operation was indicated and the result was excellent with no deaths.

With the advent of antibiotics and improved knowledge of electrolyte balance, the old philosophy that when reasonable indications for surgery exist a quick look is better than a mistake still would hold. The exception to this doctrine, however, is the acute traumatic abdomen wherein operation should be avoided at all costs unless it is necessary as a life saving procedure.

The decision to operate must not be undertaken lightly because a patient with multiple injuries in whom the abdominal findings might appear consistent with a surgical abdomen might be found due to a retroperitoneal extravasation of blood or a severe back injury or a pneumothorax and the patient might succumb to the multiplicity of his injuries. The conscience of the surgeon might thereafter be troubled because of the definite possibility that his unnecessary exploration had been the final factor which provoked the unfortunate outcome.

How then is one going to tell whether the taurmatic abdomen is surgical or non-surgical. In the typical case in which shock and hemorrhage are synonymous or in which the routine film of the abdomen reveals free air or which diordrast injected in the bladder reveals extravasation there is of course no problem. The problem cases are the ones in which there is an initial period of false security and it is seldom that one can be entirely certain at the first examination that surgery is indicated. Repeated examinations may reveal a falling hematocrit and

* Presented at Annual Meeting of Arizona Academy of General Practice, Phoenix, Arizona, February 5, 1954.

more typical findings and then the necessity to explore may seem obvious. The one finding which has proved most helpful in making the decision to avoid exploration in the absence of the afore mentioned positive laboratory findings has been the presence of active or reasonably active abdominal peristalsis. It has been so infrequent that nonsurgical lesions inhibit peristalsis to the degree of producing a silent or almost silent abdomen, that the surgeon can feel reasonably safe in not operating if peristalsis remains at a reasonably normal level. As you know, the diminution of peristalsis is in proportion to the amount of irritating fluid in the peritoneal cavity which could be gastric and duodenal contents or blood or bile or urine. Therefore, perforations of the small intestine and colon do not give these findings early and the routine x-ray film is invaluable.

One case is that of a 50 year old workman who was brought into the hospital about three hours after having been struck in the abdomen by an emery wheel which had broken from its moorings. Findings were unimpressive except for a grapefruit-sized mass just below and largely to the right of the umbilicus. The mass was soft and rather doughy in consistency and was felt to be blood and clots. The patient was not in shock and x-ray of the abdomen was not taken as it was felt that ligation of the epigastric vessels was in order anyway and exploration could be done at that time. He was operated upon after routine premedication and a large Levine tube with aspiration of the stomach contents was done. This is a necessity on all patients going to surgery who have had food within the previous ten hours as one of the most tragic and untreatable and preventable complications is the death from aspirated vomitus during the induction of an anesthetic.

As the skin incision was made there was the expected mass of blood and clots but to our astonishment there was in addition to complete rupture of the right and left rectus muscles presenting under the skin a loop of terminal ileum which had been completely transected, including about 2½ inches of the mesentery with beginning gangrene or the torn segment. Five or six other segments in the adjacent ileum had small perforations so that it was necessary to resect about two feet of terminal ileum and perform an end to end anastomosis. Routine quick exploration of the abdomen revealed no other noteworthy pathology and the abdomen was closed repairing the ruptured rectus sheath. The patient made a satisfactory recovery.

A child three years of age entered the hospital with a slightly distended generally tender abdomen and no other significant findings except a large right inguinal hernia which could be easily reduced but which was quite tender in reduction. In view of this it was felt that possibly a Richter's hernia existed with a partial obstruction and hernioplasty incision was made. Upon opening the hernial sac fresh and some old blood poured out so the incision was promptly closed and an upper left paramedian incision made. A so-called delayed rupture of the spleen was found with clots around the spleen and fresh bleeding as well. A splenectomy was performed and further careful questioning of the mother revealed no evidence of accident except a fall from a swing about two weeks before which had incapacitated the child for a few hours.

It might be well to state at this point that in analyzing the ruptured spleens at the County Hospital, it was felt that in spite of technical difficulties the spleen should be removed in all cases even though the laceration might be a minor one. There were three cases in which because of technical difficulties and the critical condition of the patient, a five yard gauze pack was placed in the area to control the bleeding. All of the patients died and at autopsy it was found that the pack had not controlled the bleeding and hemorrhage had continued. Following splenectomy or suture of lacerations of the liver or repair of any obvious intra-abdominal laceration it is imperative to do a quick general exploration of the abdomen. Any trauma severe enough to rupture one viscus may injure another viscus and 35 per cent of the deaths following splenectomy for ruptured spleen or repair of the liver or other injuries were found to be due to overlooked injuries of the gastrointestinal tract. The surgeon, having had his troubles in doing the difficult procedure, is apt to not suspect further trauma and certainly a meticulous examination of all organs is not in order but a quick examination will reveal suspicious findings in any area where more meticulous search can then be instituted.

Mrs. H. was a 75 year old woman with severe cardiac difficulties. The abdominal pain and findings localized in the right upper quadrant

radiating to the back, associated with high leukocytosis and fever. She was thought to have empyema of the gall bladder but on opening the rectus sheat a complete transverse laceration of the upper right rectus muscle was found with a large hematoma which had dissected upward and around the ribs to the retroperitoneal space in the back. The bleeding epigastric vessels were ligated, the rectus repaired and the peritoneum was not opened in view of the age and cardiac difficulties. The patient made an uneventful recovery.

Another case was that of a 19 year old boy with what appeared to be a typical picture of acute appendicitis with findings limited to the area of McBurney's point and no history of injury except the usual trauma incident to a football game three days before. Upon making an incision it was found that he had a rupture of the deep epigastric vein with a hematoma under the rectus and the clots were evacuated. The vessels were ligated and the abdomen was opened and a normal appendix removed. It is my opinion that whenever feasible with any operation if it does not increase the hazard, an appendectomy should be performed if for no other reason than to make it easier for the next surgeon to eliminate one diagnosis. We have all had the unfortunate experience of seeing an abdominal scar and have the patient assure us that the appendix had been removed and, therefore, delayed treatment until gangrenous or perforated appendicitis ensued.

The appendix in an atypical location may present diagnostic problems and a classical case of course is the one wherein the patient has left lower abdominal pain and the diagnosis is confusing until the medical student who happens to listen to the chest discovers that the heart is on the right side and the unusual case suddenly becomes simplified.

A 32 year old woman had right upper abdominal pain, nausea, vomiting, fever and leukocytosis with pyuria and the diagnosis lay between pericholecystic abscess or perirenal abscess. A urologist, after the usual study was very definite that the diagnosis was perirenal abscess but the kidney was found to be normal at operation and the peritoneum was opened to reveal a ruptured appendix lying beneath the liver and on the kidney. Recovery was uneventful.

A 30 year old waitress with a history of abdominal pain of 10 days duration, had been treated with antibiotics by a competent internist and with improvement and subsidence of symptoms after a week and a feeling of reasonable comfort for three days, when sudden severe lower abdominal pain necessitating hospitalization ensued accompanied by fever and leukocytosis. There was extreme pelvic tenderness bilaterally. Because of the confusing history and the critical appearance of the patient, operation was felt imperative even in the face of what appeared to be pelvic inflammatory disease. An appendiceal abscess was found in the right pelvis which had reruptured apparently about 24 hours earlier. Appendectomy was performed and satisfactory recovery followed but it is well to point out that in general appendiceal, pelvic, pericholecystic and pericolonic diverticula abscesses which at first respond to antibiotics and then rerupture carry a grave prognosis in contradistinction to those which may not respond so well to the antibiotics initially.

Volumes could be written on the patients who have had acute abdominal manifestations and at operation an innocuous appendix was removed and nothing further was done. The presence of mesenteric adenitis in children simplifies matters at least to the level of an honest mistake.

In children, as in adults, the slightly inflamed appendix makes at least some exploration of the abdomen, and particularly recognition of the type of peritoneal fluid present, imperative. Naturally wine colored fluid or bloody fluid, turbid or purulent fluid would demand appropriate enlargement of the incision and exploration to determine the nature of the pathology.

The next two cases present somewhat common complications in children. One case is of a child of 4 years — doctor's grandson — in whom the findings were compatible with severe appendicitis and limited to the right lower quadrant. Rectal examination gave the impression of an ill-defined mass palpable high in the right pelvis. The appendix was found to be mildly injected and covered with some fibrinous exudate but excess fluid was found and a finger toward the pelvis revealed a mass about the size and consistency of a distended gall bladder, lightly adherent to the anterior abdominal wall and the intestines in the mid-line. It was possible to gently maneuver the mass into the incision and a gangrenous Meckel's diverticulum

which had twisted upon itself three times was excised without the necessity of resecting the ileum and satisfactory recovery followed.

Another case is of a nine year old girl with rather typical findings of severe appendicitis but limited to the right upper quadrant, gave us a preoperative diagnosis of acute appendicitis with a failure of rotation and descent of the right colon and the appendix in the right upper quadrant. At exploration it was found that this anomaly was present and the appendix was in the right upper quadrant but was normal and further exploration revealed an ulcer at the base of Meckel's diverticulum which had perforated and was lightly walled off by adjacent loops of intestines and mesentery. The Meckel's was resected and satisfactory recovery followed. As one would expect the diverticulum contained gastric mucosa.

Intestinal obstruction may be simple if the findings are severe and the picture clear cut. The problem which is a trying one for the surgeon is the individual who is emotionally unstable and whose abdomen presents numerous scars and a perusal of whose previous record reveals lysis of numerous adhesions but a certain skepticism because of the absence of the description of a typical obstructive point wherein there was dilated gas filled intestine proximal to the point and collapsed and shrunken intestine distal to it. The use of the intubation tube has possibly one of its best applications here and may get the surgeon by a trying period without having to perform another unnecessary lysis of adhesions. The neurotic patients, however, can have legitimate pathology and the indwelling tube requires someone in the hospital who makes a hobby of its use and a career in following such patients very closely. It is probably most useful in those patients who have recently had surgery, particularly for an inflammatory process wherein the inflammation and edema are producing obsruction and as these subside the obstruction will subside also and when there is no evidence of impairment of circulation its use is gratifying. Unhappily, it often seems to work out that in the patients who need it most it is impossible to get it beyond the pylorus, whereas, in the patients who are not obstructed it will pass readily.

A 46 year old man was first seen in acute fibrillation with typical signs of mechanical small bowel obstruction. The picture was somewhat confused by the fact that the patient had been on massive Penicillin therapy for syphilis for the preceding four weeks. A cardiologist prepared the patient as well as possible within the next 24 hours and while the patient was being draped just after spinal anesthetic was given, tremendous quantities of gas and liquid feces was passed onto the operating table and onto the floor. It was thought best to procede in spite of the malodorous surroundings because of the possibility of strangulated intestine. At operation a volvulus of the midgut was found with typical mesenteric hemorrhages. The patient ran a stormy course with several pulmonary emboli but finally recovered.

A 19 year old girl had a fairly typical history of subsiding appendicitis for 4 days before she was first seen. No bowel movements were experienced for the past 3 days. Pain and tenderness in both lower quadrants were present and a soft gas-filled mass was felt on the left extending upward beyond the umbilicus toward the right side. Diagnosis of volvulus of the cecum was made and at operation a long thin adhesion was found extending from the left tube to the mid-portion of the mesentery. The cecum was greatly dsitended and twisted and this adhesive band was the fixed point for the volvulus. There was the usual findings in all of these cases of volvulus of the cecum; namely a failure of attachment of the right colon to the lateral abdominal wall. The sigmoid was also found to have a long mesentery and easily reached into the right upper quadrant. An incidental appendectomy was done and oddly enough the Pathologist reported acute appendicitis which findings were presumably on the basis of impairment of blood supply.

The following case is presented because it illustrates the fact that one must rely on clinical judgment based on examination of the patient and not upon laboratory findings in making a decision. The patient was a 58 year old woman who had a routine gastric resection for duodenal ulcer with almost complete obstruction; convalescence was uneventful, the nasal tube was removed on the third day but on the fifth day the paient vomited small amounts but did not appear critically ill. The next day the patient did not appear to be doing well and presented a rather typical picture associated with edema of the stoma and loss of electrolytes. This impression was confirmed by a low level of blood

chlorides and potassium and a high NPN and CO_2 combining power. Appropriate electrolytes were given parentally and the next day the intern assured us that the patient was much better because the recheck of the electrolytes revealed essentially normal potassium chlorides, CO_2 and NPN. A look at the patient, however, dispelled any optimism as she appeared critically ill and the abdomen was distended and moderately rigid. A remark was made to the intern that while the laboratory findings might be normal the patient was going to die unless something was done to correct an obvious acute intra-abdominal catastrophe. X-ray shown revealed a typical volvulus of the cecum with the enormous dilitation of the cecum which is presenting typically in the left upper quadrant of the abdomen. The free air in the abdomen is compatible with the previous operative procedure and at operation the typical failure of attachment of the right colon was seen with the volvulus as shown was found. The diagnosis could have been made earlier had not the picture been somewhat consistent with that frequently seen in vomiting following gastric resection. The area of anastomosis was examined and was normal and the volvulus of the cecum was apparently purely coincidental.

The management of acute cholecystitis is somewhat controversial since several centers have the philosophy of cholecystectomy at all stages of the disease with recorded satisfactory results. These results have not held up in the average hospital with the average surgeon, however, and the cholecystectomy in general is preferred as an elective procedure. There appears to be a good deal of doubt as to what constitutes early operation of the acute gall bladder as the 48 hour period should mean 48 hours after the onset of symptoms and not 48 hours after the surgeon has seen the patient. In the early period the hazard is probably no greater than that of elective cholecystectomy which should be negligible. The survey of the last six months of our services at the County Hospital revealed seven emergency and 32 elective cholecystectomies with no death, whereas, in seven other emergency cholcystectomies there were two deaths.

All the emergency cholecystectomies were on patients with either empema or pericholecystic abscess and where delay in entering the hospital made for a grave prognosis.

The procedure if empema or perforation of the gall bladder is suspected should be the simplest one possible, namely drainage of the gall bladder and removal of the stones even though elective cholecystectomy is indicated later for the prevention of further stones or removal of the ones that could not be papated in the cystic duct.

It is my impression that a summary of the opinions of the residents at the County Hospital for the last 20 years would be that in observing all the surgeons there, that except for those men who got in trouble with everything they did there was no serious trouble with gall bladder surgery except in the acute cases wherein the anatomy was unrecognizable because of edema and induration of the tissues.

Patients with perforated ulcer present no diagnostic problem if their findings are typical and particularly if the clinical diagnosis is supported by evidence of free air in the abdomen. Those wherein the clinical evidence is clear cut and there is no free air may be considered candidates for operation although the presumption is that the perforation was into the lesser perioneal sac posteriorly and was somewhat walled off so that a trial of conservative management may be justified. The recent literature reveals reports of good results with conservative management but the burden of proof would still appear to be wih those who use it, and it is my prediction that it will not stand the test of time. During the past six months 31 perforated ulcers were repaired with 6 deaths. A survey of these revealed that all were neglected cases of well over 48 hours duration of symptoms and all but one over 50 years of age.

The decision as to the proper operative procedure is usually that of simple closure of the ulcer. Recently reports of resection at the time of operation have revealed satisfactory results and if the surgeon is competent to do a quick resection and there has been little soiling and minimal shock this may well save the patient subsequent operation for cure of symptoms.

It might be well to comment at this point, however, that sometimes when one makes a hobby of a certain operation he can get results which will not be duplicated by others.

In all emergency procedures as well as elective operations if feasible at all the exploring hand, before getting to the contaminated area, may provide the surgeon with satisfaction of

finding an asymptomatic carcinoma of the G.I. tract or pelvic, which he can care for satisfactorily as an elective procedure after the acute episode has been managed.

The postoperative management of the acute surgical abdomen has not been covered in detail since the control of electrolytes and distention is well known to all. One problem which appears to be of increasing magnitude is the transfusion-happy attitude which seems to be developing and which is having serious ramifications. The use of blood should be limited to those in whom it is a life saving procedure and use of a routine transfusion either for its tonic effect or because the surgeon is slow and the procedure long appears unjustified. Blood is a two edged sword and serious complications can be associated with its use.

Consideration of the disease entity hepatitis must bear in mind among other things the sources, the origins, and modes of transmission of the infection. We speak of two types of hepatitis. There, however, is no concrete evidence to indicate with certainty that these are different diseases, any more than one cold is different from another. Possibly the only difference may be in the mode of transmission. Homologous serum hepatitis is transmitted by injection of serum as in whole blood or any blood product. Infectious hepatitis is transmitted by fecal contamination of food and water or by direct individual contact. Homologous serum hepatitis is generally more severe and has the longer incubation period because of the size of the innoculating infection is generally so large. Infectious hepatitis generally has a shorter incubation period and a lower mortality and lower degree of morbidity. Once a hepatitis has developed the two forms cannot be differentiated by any clinical method.

In the population at large approximately 0.5 of 1 per cent of all individuals are carriers of the virus of hepatitis which may be transmitted by transfusion. The figure is determined from the incidence of post-transusions hepatitis. It is not possible by any known method to determine whether an individual's blood or serum carries the virus of hepatitis. The National Institute of Health prescribes a routine for examination of all donors and their blood which should be closely followed. This includes careful questioning concerning recent and past infections, routine serology, temperature determination, and chemical tests for excess blood pigments.

The incidence of infectious hepatitis is 0.02 of 1 per cent. If these figures are applied to the general Los Angeles population areas as of 1952 when a study was made, we see that on the basis of approximately 15,000 transfusions given that year there would have been about 75 cases of homologous serum hepatitis following transfusion. However, in the total Los Angeles population area of three and one half million people there would have been 700 cases of spontaneous infectious hepatitis, clinically indistinguishable from the post-transfusion variety. A history of transfusion within six months preceding development of hepatitis may presume that the donor blood was the source of the infection but cannot be considered to be direct proof. Hepatitis also may be transmitted through the medium of instruments which have been sterilized by methods such as boiling which may not destroy the virus. That hepatitis is then at the present time a possible sequel of transfusion which cannot be foretold or forestalled.

During the period of the last war the expression "a calculated risk" became a byword. The significance of this term as applied to medical procedures is something that we are prone to overlook. Although a procedure may be an imperative life saving necessity, the hazard of the calculated risk still exists. The mortality rate following blood transfusion approaches that following appendectomy or anesthesia. Obviously, then a transfusion is not an entirely benign procedure, and possible benefits should be weighed against the hazards.

In consideration of the hazards involved and bearing in mind the "calculated risk", I think we might well paraphrase another popular query of the last war and ask "Is this transfusion necessary?"

The untoward reactions associated with administration of the wrong type of blood can frequently be noticed before a substantial amount is given providing the patient is awake. The time to correct severe anemia is before the patient is anesthetized and on the operating table. Doctors and laboratory personnel are honest but not infallible and the human error cannot be entirely eliminated. It is no more possible to entirely prevent accidents with thousands and thousands of transfusions given than it is with thousands and thousands of automobile drivers.

Improved technique, improved antibiotics, improved knowledge of postoperative care and improved electrolyte control have lessened the hazards and possibly some of the challenge of surgery of the acute abdomen.

In conclusion, there is still the automobile which does not bow to antibiotics and there are antibiotic resisting strains of bacteria, so it would appear that the acute surgical abdomen like the poor, will always be with us.

MANAGEMENT OF THE ANEMIAS DIAGNOSIS AND TREATMENT*

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INTRODUCTION

BEFORE beginning the discussion of the management of anemias it is appropriate to define the normal values. For the adult, a convenient average for packed cell volume (hematocrit) is about 45 per cent, the average hemoglobin 15 grams per cent, and the average red blood count 5 million per cubic millimeter. These three figures are easily remembered and will be used later as the basis for the calculation of the normal indices. In each case the average for the female is slightly lower than the figure given and the average for the male is slightly higher. It must also be remembered that a normal child one year of age would be expected to have a hemoglobin of around 11 grams. During the latter part of pregnancy the hemoglobin also drops to an average of about 11 grams.

The number of red cells circulating depends upon the balance between the rate of production and the rate of destruction. In other words, anemia may be produced by an inadequate manufacture of red cells or an excess loss of red cells either from hemorrhage or from increased intravascular destruction.

DIAGNOSIS

There are many tests that may be necessary to adequately diagnose the type of anemia. For the purpose of this discussion the most commonly used tests are divided into two groups — those that can be done reliably in an office and those that must be done in a regular clinical laboratory. In Table 1 are listed the office procedures.

OFFICE PROCEDURES

PACKED CELL VOLUME: The packed cell volume is the simplest and the most reliable method of diagnosing anemia. The test determines what percentage of whole blood is made up of red cells. An anti-coagulant such as the proper ammonium and potassium oxalate should be used in order to avoid changes in the size of the red cells. A properly filled Wintrobe tube is spun in a centrifuge until the packing is complete. Fifteen to thirty minutes are required in a good desk model centrifuge at 2500 RPM. The length of time needed for any one centrifuge can be readily obtained by examining the Wintrobe tube at regular intervals and noting the time at which additional spinning will no longer increase the packing of the cells.

TABLE 1 Office Laboratory Procedures

1. Packed cell volume (P.C.V.)
2. Hemoglobin
3. Red blood count
4. Stained smear
5. Gastrict analysis

HEMOGLOBIN: The accuracy of a hemoglobin determination depends upon the method used. Each doctor should acquaint himself with the accuracy of the method used in his office. The Sahli method is useful for screening but is not accurate enough for the calculation of indices. A photoelectric colorimeter determination can be done quickly and is sufficiently accurate if properly calibrated. Hemoglobin should always be expressed in grams per 100 cc. of blood rather than in terms of percentage. The percentage will vary depending upon the number of grams considered as 100 per cent.

RED BLOOD COUNT: The result of a red blood count is not as accurate in determining the degree of anemia as is the packed cell volume or the hemoglobin. So called accurate pipettes may be responsible for as much as half

* Presented before the annual meeting of the Arizona Academy of General Practice, Phoenix, Arizona, February 5, 1954.

a million variation in counts. Cut-rate bargain pipettes are, of course, usually the most inaccurate.

STAINED SMEAR: Much information can be determined from a good well-stained smear. In addition to recognizing abnormal white cells, one accustomed to looking at smears can readily estimate the size of the red cells and their degree of saturation with hemoglobin as well as the presence of abnormal cells, such as spherocytes or sickle cells.

GASTRIC ANALYSIS: For the purpose of hematologic diagnosis, gastric analysis can be easily done in a doctor's office. Histamine stimulation is necessary. A simplified tubeless method (Diagnex) of determining free hydrochloric acid in the stomach now has been devised with a quinine resin. Hydrochloric acid is necessary to break the quinine away from the resin. The quinine absorbed is excreted in the urine and can readily be detected there. Gastric analysis is primarily useful in the diagnosis of pernicious anemia.

OTHER PROCEDURES

A regular clinical laboratory with experienced technical help is often needed for more accurate determination of the tests listed above as well as the following other special tests that cannot be done well in the ordinary physician's office.

RETICULOCYTE COUNT: A reticulocyte is a red cell that has just been liberated into the circulation from the bone marrow. The percentage of these cells then gives an estimate of the rapidity with which red cells are being liberated. Normally one-half to one and one-half per cent of red cells are reticulocytes.

BONE MARROW STUDIES: By a bone marrow study one is able to sample the factory. Blood cells must go through various stages of development. A disturbance in the production of red cells will frequently be reflected in the bone marrow findings. Considerable experience, however, is necessary to accurately interpret a bone marrow sample.

COOMBS TEST (Antiglobulin test): This test is for the purpose of determining if antibodies are present on the surface of red cells and especially useful in the study of acquired hemolytic anemias.

URBOLINOGEN STUDIES: Since urobilinogen is the end product of the breakdown of red cells the amount excreted in the urine and in the stools per day is useful in determining the rate of red cell destruction. Normally the urine should contain 0.5 to 1.5 mg. per day. The excretion of urobilinogen in the stool should be between 40 to 280 mg. per day.

Many other tests such as the Ham test, tests for cold agglutinins and increased fragility, Donath-Landsteiner test, and sickling tests are useful under special circumstances.

TABLE 2 Normal Indices

M.C.V.	$= \left(\frac{\text{P.C.V.}}{\text{Rbc.}} \times 10\right)$	45/5 x 10 = 90 c.u.
M.C.H.	$= \left(\frac{\text{Hb.}}{\text{Rbc.}} \times 10\right)$	15/5 x 10 = 30γγ
M.C.H.C.	$= \left(\frac{\text{Hb.}}{\text{P.C.V.}} \text{ or } \frac{\text{M.C.H.}}{\text{M.C.V.}}\right)$	15/45 or 30/90 = 33%

NORMAL INDICES

Table 2 indicates the method of calculating indices. By these calculations one is able to determine the average size of the red cells (M.C.V.), the average amount of hemoglobin in each cell (M.C.H.) and the average degree of saturation of the red cell with hemoglobin (M.C.H.C.). The normal average figures for packed cell volume, hemoglobin, and red count given previously are used for the basis of the calculations.

For the determination of the size of red cell (M.C.V.) the packed cell volume is divided by the red count in millions and the result multiplied by ten. The answer is expressed in cubic microns.

The amount of hemoglobin in the cell (M.C.H.) is calculated by dividing the grams of hemoglobin by the red count per million times ten. This answer is expressed in micromicrograms of hemoglobin in the average individual cell.

The mean corpuscular hemoglobin concentration (M.C.H.C.) is calculated by either dividing the hemoglobin by the packed cell volume or by dividing the M.C.H. by M.C.V. The answer is expressed in per cent and gives the percentage of the red cell that is made up of hemoglobin.

The results as illustrated in Table 2 are easy to remember and do no serious injustice to accuracy. Variations may be summarized as varying from a plus to a minus 3 in each of these values.

CLASSIFICATION OF ANEMIAS

There are many classifications of the anemias. One of the most practical and yet simple classification general accepeted depends upon the average volume of the red cell (M.C.V.). On the basis of this classification, the red cell size

may average smaller (microcytic), larger (macrocytic), or normal (normocytic). Each type of anemia will now be discussed.

MICROCYTIC ANEMIA: The following represents a typical example:

P.C.V.	21%
Hemoglobin	5 grams%
Red blood count	3.0 million

In the calculation of indices the following results would be obtained:

M.C.H.	17 Gamma Gamma
M.C.V.	70 c.u.
M.C.H.C.	24%

It should be noted that this is truly a microcytic anemia since the M.C.V. is 70 as compared with normal of almost 90. There is also considerable less amount of hemoglobin in each cell than usual, in fact, according to the M.C.H.C. the cells are 24 instead of 33 per cent saturated. This illustration is typical of iron deficiency anemia. Since there is normally no appreciable loss of iron from the body except during a pregnacy, a microcytic anemia in an adult means chronic blood loss. The successful treatment of this type of anemia depends upon discovering the source of bleeding, stopping it, and giving the patient iron. Usually the iron can be given orally as enteric coated tablets of ferrous sulphate following meals. Sacchharated iron is now avalable for intravenous use. By this route effective amounts of iron can readily be given. Its use should be limited, however, to special circumstances since overdosage will produce hemosiderosis. Microcytic anemia may also be produced by chonic infections and is a characteristic feature of Cooley's trait.

MACROCYTIC ANEMIA: The following is an illustration of the values that may be obtained in a patient with a macrocytic anemia:

P.C.V.	24%
Hemoglobin	8.0 grams%
Red blood count	2.0 million

On calculating the indices the following would be obtaine:

M.C.V.	120 c.u.
M C H.	40 Gamma Gamma
M.C.H.C.	33%

Since the cells average 120 cubic microns in volume they are larger than normal and the anemia is classified as macrocytic. The amount of hemoglobin per cell is also greater than normal being 40 instead of 30. The saturation remains complete at 33 per cent. This blood count is typical of pernicious anemia. Since pernicious anemia is apparently due to failure to absorb vitamin B-12, the disease can be controlled by the parenteral administration of B-12 or liver. Milder forms of the disease without neurological involvement may be maintained in relatively good hematologic remission with the oral use of a combination of B-12 and dessicated stomach. This same type of anemia is also seen in certain gastrointestinal diseases such as the diarrheas of sprue, celiac disease and streatorrhea, chronic liver disease, extensive loss of the stomach mucosa by malignancy or by the removal of a large portion of the stomach, and rarely by certain parasitic infestations of the intestinal tract. Treatment of the associated disease as well as the administration of B-12 is helpful. Folic acid may be necessary in the treatment of the macrocytic anemia associated with pregnancy. Since in acute hemolytic anemias the reticuolcyte count is high, and since reticulocytes are larger than adult red cells, the M.C.V. may be elevated. Occasionally macrocytic anemia is associated with hypothyroidism.

NORMOCYTIC ANEMIA: The following is a typical example of a normocytic anemia:

P.C.V.	22%
Hemoglobin	7.5 grams%
Red blood count	2.5 million

The calculation of the indices reveal the following:

M C.V.	90 c.u.
M.C.H.	30 Gamma Gamma
M.C.H.C.	33%

This type of anemia may be produced by the depression of the marrow by drugs, chemicals or retention of nitrogenous products or by replacement of the marrow as in leukemia, multiple myeloma, extensive metastatic carcinoma of bone marrow or mylofibrosis. Occasionally it is seen in hypothyroidism. Immediately after an acute blood loss this type of anemia is present. Conditions shortening the life span of red cells (hemolytic) characteristically produce a normocytic anemia. It should be recalled that in hemolytic anemias the reticulocyte count is increased and the bone marrow is hyperplastic. Spherocytes may be detected on the smear and on testing osmotic fragility. Urobilinogen excretion is increased. A classical example of this anemia is congenital hemolvtic anemia in which spectacular results are obtained by splen-

ectomy. Acute acquired hemolytic anemias may also produce this form of anemia. These may respond to cortisone or corticotropins. Splenectomy may also be useful in the treatment of the acquired hemolytic anemia. Increase destruction of blood cells is also present in some lymphomas, certain bacterial infections especially those due to Clostridium Welchi and certain parasites such as malaria. The successful treatment, of course, depends largely upon the treatment of the underlying disease. Sickle cell anemia may be included in this group. Although the cells under certain circumstances may be unusual in shape their volume is near normal.

Very little has been said regarding the use of transfusions in the treatment of anemia. Transfusion before adequate study of the anemia as to type is rarely justified. For the prevention or treatment of shock due to acute blood loss nothing can be adequately substituted for transfusions. Before the patient with anemia receives a blood transfusion he should be adequately studied, and if possible, treated by other means.

One word of caution should be given regarding the acceptance of the laboratory evidence for anemia at face value. Changes of blood volume must be taken into consideration in evaluating blood counts.

SUMMARY

The management of anemias has been reviewed with emphasis being given to accurate diagnosis before treatment is begun. Treatment should be limited to the specific substance that is needed to correct the patient's anemia.

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TUBERCULOSIS IN THE AGED

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WE are living longer lives; there are progressively more and more of us; and tuberculosis remains a formidable foe. It follows that the problem of tuberculosis in the aged is becoming ever more prominent. Statistics confirming these postulations are abundant and a projection of the enlarging problem into succeeding decades can be made, assuming that no medicinal panacea changes the present balance of power between the germ and research.

The general gradual increase in anticipated longevity for the adult applies to the tuberculous patient as well as to the otherwise ill or healthy person. Also, by virture of the infectious nature of the disease, more time for exposure means a greater incidence of disease.

Because of Public Health measures in the control of tuberculosis and the general elevation of hygenic and nutritional levels of the public, there has been a gradual trend of the infectious person to the older age group. Again, because of recent strides in the management of this disease, there are many tuberculous patients now alive but classified as chronics who might not have survived their acute infections.

The mobile nature of the citizenry of this country adds its factor to this problem. The influx of a significant component of adult population to this area of the United States increases the proportion of the upper end of the general age scale. The causes for this population trend apply equally to the healthy and the sick and as a consequence, many new residents bring their illnesses with them. Some of these ills are tuberculous in origin.

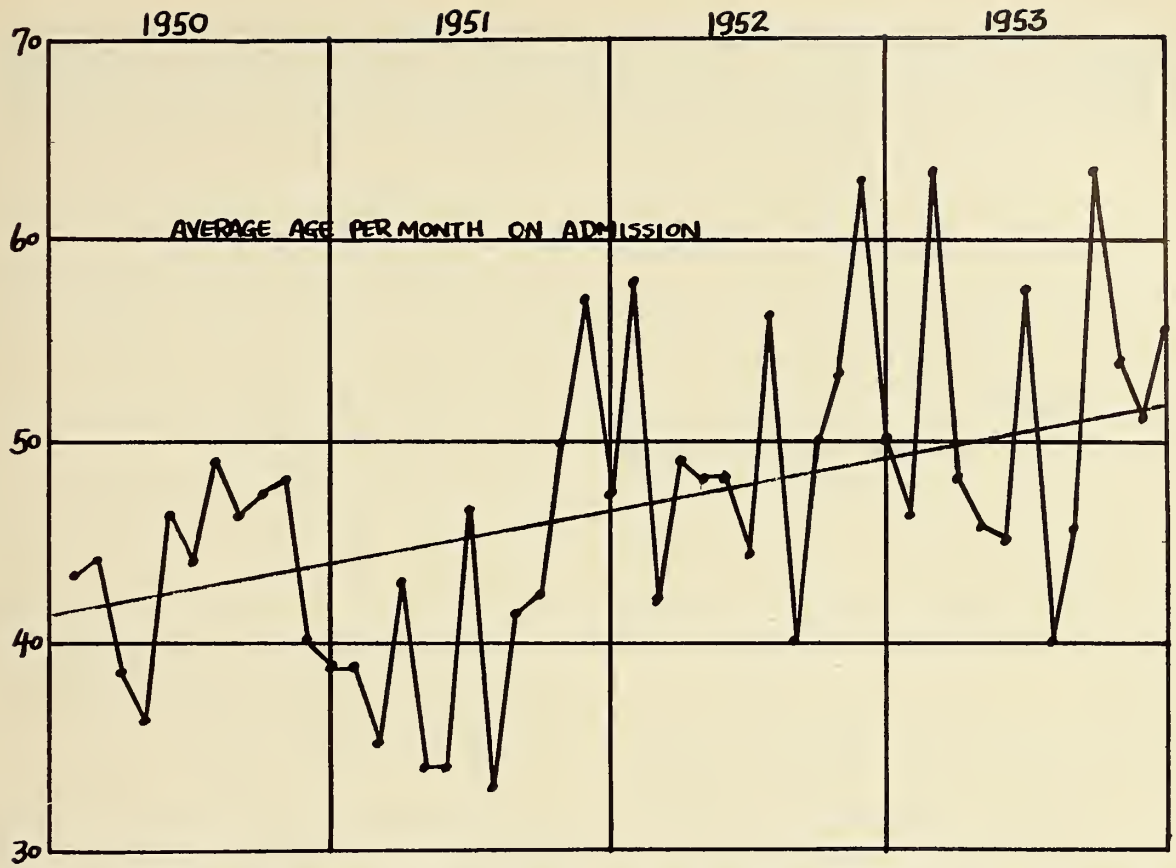
Four-year Statistical Review of Patients' Admission Age

The admissions to La Vina Sanatorium over a period of four years were reviewed and the ages charted. The curve with its temporary average fluctuations, shows a steady rise in the patient-age on admission. At one point in mid-1951, there was a remission in the gradual climb of the curve and this remission reflects the findings of a younger series of patients uncovered by the Los Angeles County Tuberculosis Survey.

General Principles of Treatment for the Elderly Patient

Treatment of any kind for the elderly includes the application of principles of therapy given to the average patient plus those special precautions necessary for the aged. These secial considerations consist of handling a vascular inelas-

Presented before staff of La Vina Sanatorium, Sept., 1954.



ticity with diminished reserves of the cardiac, pulmonary and renal systems. These limitations are reflected in a lowered vital capacity, a tired and possibly abused heart, a slower metabolic rate, a lessened adaptability to stress, and occasionally senile deterioration. This means, more simply, a greater morbidity to the patient and a narrowed latitude for the physician.

When these generalizations of therapy for the aged are brought into the scope of the care of tuberculosis, the differences for the physician, the nurse, and the family become large.

First, an evaluation of the physiological age as compared with the chronological age shows marked variation in the individual response to the aging processes. This variation refutes a definite borderline beyond which certain forms of treatment are excluded in a broad plan of therapy.

Hospitalization for the older patient with tuberculosis involves special administrational obstacles. Economically, he is probably dependent upon younger members of his family or without such aid, increases the geriatric proponent of a social program of care. The patient himself, does not adapt well to any extended change in his well established ritual of living. It has been found difficult to teach tuberculous technique to the elderly, which makes nursing or the procurement of nursing more difficult.

Application of Principles of Therapy for the Aged

Not only is the physiologically old patient less adaptable to hospitalization, but he is also less capable of tolerating some of the procedures of treatment. A vigorous program based on preventative as well as therapeutic principles, in which a large risk is balanced by an extended future free of disease, can be offered less enthusiastically to the aged than to other groups. However, the elderly also deteriorate more quickly than their younger parallels on strict adherance to a conservative regime or bed rest. Physical inactivity begets further inactivity, independence gives way to complete dependence, and the old are particularly prone to some sequelae of bed rest such as phlebothrombosis. A summary, therefore, of the limitations of therapy for the elderly toward recovery from a tuberculous infection confronts the physician by a narrow selection of a plan hemmed by a lower tolerance to active measures of surgery, a slow rate of healing if conservative measures are pursued, and a detriment of general well-being if

bed rest alone is used. A compromise within these binding factors is sought.

The controlled care in a tuberculosis hospital is unquestionably the ideal where bed-rest is used in a modified form to adapt to the requirements of eccentricities of the patient. Anti-bacterial or chemotherapy with the hope of sterilizing a lesion has its greatest forte in this group of patients. The anti-tuberculosis drugs are usually well tolerated and appear to give the same encouraging response as in the middle and younger age groups. All of the patients in the sixty or over age bracket have received chemotherapy in the tuberculosis hospital from which the previous statistics were obtained. The use of air therapy is more restricted and less rewarding in this group because of the usual chronicity of disease leading to fibrosis of lesions, and because of the lessened tolerance of the patient to minimal long term physiological changes attending its use.

Whether the increased call of the elderly tuberculous patients for the tuberculosis beds now available can be met is one of the present problems confronting phthisiology. The solution appears to lie within these alternatives:

1. Admit all infectious cases to the care of a tuberculosis hospital;

2. Adaptation and education of both the patient and his home so that his illness can be handled safely and effectively on a home-patient basis;

3. The application of a rapid and effective conservative regime while hospitalized — a method not yet realized;

4. The application of the more radical recent trends of resectional therapy which have shown increasingly rapid effective suppression of the disease in the younger patients.

Surgery and the Elderly Tuberculous patient

The aspect of presenting surgery to the elderly patient has provoked a great amount of thought with substantiated controversial pro and con factors. Phthisiologists have not themselves reached full agreement as to the position of surgery as a target in the plan of tuberculosis therapy, while at the same time surgeons are venturing further and further in daring attacks on carcinoma within the thorax. The ability of the elderly to withstand major surgery has repeatedly been discussed, (1), (2), (3), and (4) and effective methods have been encouragingly outlined with respect to the surgical needs of the elderly patient. Others, (5) and (6), have also urged the surgeon by their study of cardiac reserve in previously injured hearts.

The use of surgical collapse procedures for the aged, in lieu of resection of a portion of the lung, is finding progressively fewer sponsors and less enthusiasm. Permanent collapse is now considered almost equally as formidable as resection and does not have the more positive results the latter can offer. Here, then, lies a basic aspect of this problem. By what guides should we offer or withhold from an elderly patient the surgical measures that are given with proven benefit to the young? Important considerations are, (1) — philosophically, how much useful future can an old patient expect, and (2) — if a safe way for resection in the aged is paved by the surgical attack on thoracic cancer, may not the same be used for the well selected resectable tuberculous lesions?

Surgical removal of tuberculous tissue in a relatively small proportion of patients with this infection, in this general area, will not erradicate the disease in a few months or even in a decade, but it will lend its undoubtable support in our cosmic effort to add tuberculosis to the list of conquered afflictions.

CONCLUSIONS

1. Tuberculosis remains a problem despite recent strides with chemotherapy, and the problem has both medical and social aspects.

2. Tuberculosis is an affliction of the aged as well as other age groups and because the general population is living longer, there is more tuberculosis in older patients than in previous decades.

3. Advances have been made in both surgery of tuberculosis and surgery of elderly patients. In selected patients, it is felt that the indications can be broadened for resectional treatment in the older person with pulmonary tuberculosis.

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PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRENSENTATION OF CASE

A thirty-four-year-old man was admitted to the hospital because of pain in the left side of his chest.

Two months before admission the patient first noted an ache in the left axilla while sweeping a floor. This ache was worse on deep breathing, coughing or sudden movement. About one month prior to admission he had a mild chill, fever with a temperature ranging from 100 to 101°F., and a mild cough productive of a small amount of whitish, mucoid sputum. This illness was short lasting, but thereafter the pain persisted and gradually became more severe but remained pleuritic. He next noted a very tender spot over a rib in the left axilla. He believed that a low-grade fever had been present intermittently. There had been no hemoptysis, hoarseness, weight loss or exposure to tuberculosis.

Physical examination showed a well nourished man in mild distress complaining of pleuritic pain in the right side of the chest. A tender soft-tissue fullness, 5 by 2 cm., was felt in the midaxilla over the left sixth rib. A soft patchy friction rub of leathery quality was heard over the left-lung base posteriorly and at the left posterior and midaxillary line. Otherwise, the chest was clear to percussion and auscultation. The remainder of the physical examination was noncontributory.

The temperature was 100°F., the pulse 80, and the respirations 20. The blood pressure was 100 systolic, 60 diastolic.

Urinalysis was negative. Examination of the blood revealed a white-cell count of 8800, with 68 per cent neutrophils, and a hemoglobin of 16 gm. The nonprotein nitrogen was 19 mg., the calcium 10 mg., the phosphorus 3.7 mg. the alkaline phosphatase 3.3 units, and the total protein 7.48 gm. per 100 cc., with a normal albumin-globulin ratio. The sedimentation rate was 12 mm. per hour. Roentgenograms of the chest demonstrated a destructive process in the sixth rib in the axillary line, involving the entire thickness of the rib over a distance of about 3 cm., with a soft-tissue mass both inside and outside the chest cage. There was a suggestion of increase in the fine mottled markings throughout both lung fields, most pronounced peripherally, and a small amount of fluid in the left costophrenic angle as well as some adherence of the left leaf of the diaphragm. Intravenous pyelograms showed a double renal pelvis and double ureter on the left; no other abnormality of the upper urinary tract was demonstrable. Gastrointestinal series, barium-enema examinations and films of the lumbosacral spine and pelvis showed no abnormalities.

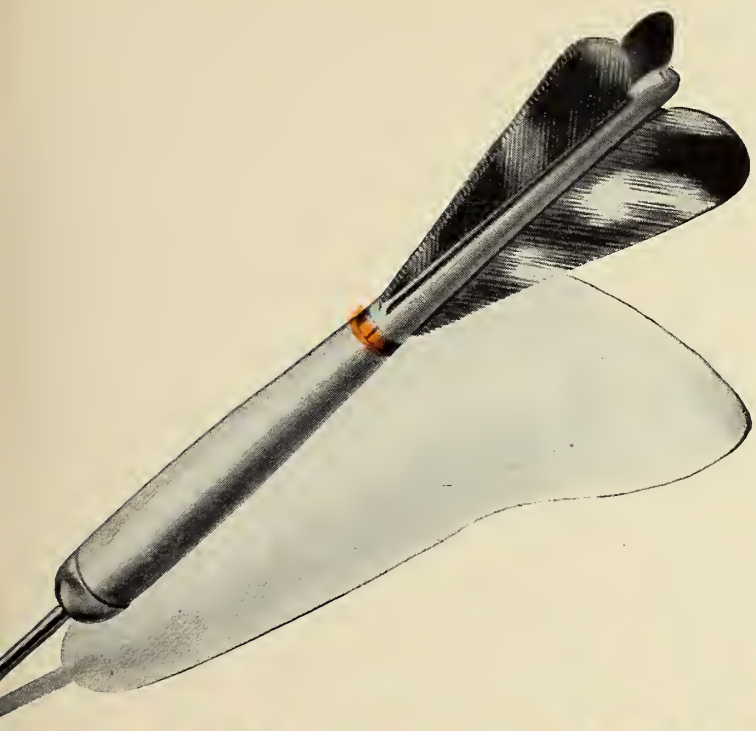
On the eleventh hospital day an operation was performed.

DR. ROBERT S. FLINN: This is a story of a 34 year old man who entered the hospital with a tender, soft tissue fullness in the midaxilla over the left 6th rib. X-ray examination demonstrated a destructive proccess in the left 6th rib in the axillary line involving the entire thickness of the rib over a distance of about 3 cm. with a soft tissue mass both inside and outside the chest cage. His white count and sedimentation rate were within normal limits and all other laboratory procedures, including an alkaline phosphatase, were normal.

Because of the history and x-ray appearance, I believe that we can rule out osteomyelitis, tuberculosis and other chronic inflammatory processes.

Having disposed of chronic inflammation as a cause of this patient's condition, let us turn to consideration of tumors of the thoracic wall. According to Coley, benign and malignant tumors of the ribs, costal cartilage and sternum are uncommon if metastatic carcinoma and plasma cell myloma are excluded. Both of these conditions result in bone destruction. Although we must consider metastatic disease as a cause for this patient's condition, there is nothing in


ACH



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Acute Pyelonephritis
Chronic Pyelonephritis
Mixed Bacterial Infections
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the history or examination to implicate any particular part of the body. In a similar way, I do not see how we can consider plasma cell myloma since there is no mention of the presence of Bence-Jones protein in the urine, and the serum protein is within normal limits. It should be mentioned here parenthetically, however, that in only 60 per cent of patients with plasma cell myloma, is Bence-Jones protein found in the urine. The presence of Bence-Jones protein in the urine or a total serum protein of 8.5 grams in a patient with osteolytic bone disease, a diagnosis of plasma cell myloma is reasonably certain. If plasma cell myloma was considered in the differential diagnosis of this patient, one wonders why x-rays of skull and long bone was not carried out. It is true that solitary plasma cell myelomatoa are occasionall referred to in the literature, however. the condition is so rare as to require little consideration here.

Of the remaining tumors of the thoracic wall, statistically condroma, osteogenic sarcoma and Ewing sarcoma are the most important. Some idea of the relative frequency of sarcoma in this region may be gained from the following figures taken from Coley: Campbell found one rib case among 57 osteogenic sarcomas; Meyerding found three rib and three sternal in 100 osteogenic sarcomas.

Central condroma is the commonest benign form and of great importance because of its tendency in middle and late adult life to undergo chondro-sarcomotous alteration. It may arise in the rib itself or in connection with costal cartilages and occasionally in the sternum. Giant cell tumor is quite unusual in the ribs. Ewing sarcoma (endothelioma of the bone) may involve the ribs but it is exceedingly rare in the sternum. Metastatic cancer and plasma cell myloma comprise a vast majority of destructive rub tumors. I believe that we can rule out both endothelioma of the bone and osteogenic sarcoma by the lack of characteristic x-ray findings. In the former, reactive bone is generally laid down in layers (plywood or onion skin appearance.) parallel to the shaft which is not the case in osteogenic sarcoma where radiating spicules project at right angles from the cortex like the sun's rays.

The third most likely condition to consider is chondroma. These are centrally situated tumors of cartilagenous derivation, also known as chrondromyxomas or enchrondromas. These growths occur in the metacarpals, metatarsals and phalanges of the hands and feet and in the ribs, femur, tibia, humerus and pelvic bones. The diagnosis from x-ray examination may be quite difficult for they can closely simulate a giant cell tumor or cyst or even an osteolytic area due to central sarcoma of low grade. According to Coley while the roentgenologist can frequently make a strong presumptive diagnosis of central chondroma on the basis of a circumscribed area of radio lucency in the end of a long bone, it is often possible to confuse the picture with that presented by bone cyst, giant cell tumor and non-osteogenic fibroma bone. He points out the necessity of exploration and microscopic diagnosis.

Still another condition which should merit a mention is eosinophilic granuloma. This peculiar solitary lesion of bone was described by Jaffe and Lichenstein about 1940. It is apparent that there is a close relationship between eosinophilic granuloma, Lettrer-Siwe disease and Hand-Schuller Christian's syndrome. It now seems reasonable to assume that these conditions represent clinical gradations of the same basic disorder. When manifested in infancy or early childhood, often in a fatal form with involvement of both skeletal and soft parts, the terms non-lipid histiocytosis or Lettrer-Siwe disease is appropriate. When the disorder affects children or adults and assumes a chronic form in which the histiocytic areas undergo cholagen or lipid alterations the designation of lipo granulomatosis or Hand-Schuller Christian's disease is proper. The prognosis is less grave although still uncertain on account of the damage to lungs, pituitary and heart muscles. Finding the comparatively benign form localized apparently in the bones and often in a single bone occurring in children and young adults is designated as eosinophilic granuloma. Radiation therapy, simple curettage or even spontaneous resolution serve to bring about healing of the involved areas. That this condition is not confined entirely to children and adolescents as emphasized by a recent report in the Annals of Internal Medicine (March, 1954) by May who describes three cases of eosinophilic granuloma of the lung with rib involvement. The ages being 40, 28 and 36 respectively.

In one of his cases the x-ray of the chest was negative except for 1.5 cm destructive lesion in the posterior part of the right 5th rib. At oper-

ation, the destructive costal lesion was excised and through the incision the lung was palpated and 1 cm. periphereal nodule was found. Only an upper lobectomy was performed because there was no evidence of disease in the rest of the lung or mediastinum. Pathological study did not confirm the original impression from the frozen section of undifferentiated carcinoma. The final tissue diagnosis was eosinophilic granuloma. The convalescence was uneventful. The second case showed a destructive lesion of the left 9th rib. Histological examination of the specimen revealed that eosinophilis granuloma. However, following the operation, the paient began to develop symptoms of shortness of breath, and cough and a right thoracotamy showed the lung to be diffusely granular.

But to return to our patient, here we have a 35 year old man with a destructive process in the 6th rib. After reviewing the possibilities, it seems to me the diagnosis rests between enchondroma and eosinophilic granuloma. Since even Coley points out, the ultimate diagnosis must rest on the microscopic study of the tissue removed by curettage, one can only hazard a guess. I, therefor, fancy the diagnosis of eosinophilic granuloma.

Differential Diagnosis

DR. RONALD C. SNIFFEN: In brief, this thirty-four-year-old man had acquired, without trauma, a destructive lesion in the left sixth rib accompanied by a soft-tissue mass in the region. Apparently, the process had led to pleural irritation and a small amount of fluid in the pleural cavity. Pleural pain and tenderness were the only subjective symptoms. Physical examination demonstrated a non-pulsating mass in the soft tissue over the sixth rib and confirmed the impression of pleuritis given in the history.

Obviously, the roentgenographic findings are of the utmost importance. What had the process done to the rib? Was it entirely osteolytic? What was its contour? Was there a periosteal reaction or change in the neighboring bone? Finally, were there significant collateral findings?

DR. STANLEY M. WYMAN: We see the fine rather granular mottling in the films of the chest that appears rather diffusely distributed and is unaccompanied by appreciable lymph-node enlargement. There is a tiny quantity of fluid in the left pleural cavity that is best seen posteriorly. The destructive lesion in the left sixth rib, described in the protocol, shows no new-bone formation, periosteal reaction or ray formation. The Bucky films best demonstrate the accompanying swelling about the rib both medially and laterally. The bones are otherwise well preserved, and the spleen appears well within normal limits in size; no other lesions are seen.

DR. SNIFFEN: Is there any evidence of lymphatic involvement in the lung?

DR. WYMAN: No, I do not think there is any significant enlargement of the linear shadows in the lungs to suggest characteristic lymphatic involvement.

DR. SNIFFEN: I am overwhelmed by negative findings. The patient did not feel ill and had not lost weight; the laboratory tests were entirely negative, and x-ray examination demonstrated no abnormality except the fine mottling throughout the lung fields actually, that finding is very disturbing. In every patient's history there are at least a few worrisome interjections, which may guide one's train of thought. They may be abruptly discarded or carefully included to bolster a particular condition. From the history, trauma can be dismissed as a causative factor. One month before admission the patient had a chill with fever and a cough. I do not consider this episode important principally because of its short duration, the unexciting character of the sputum and the lack of relation to the chest pain. Yet there was a suggestion of subsequent intermittent fever, and the temperature was slightly elevated at the time of admission. I do not believe that the lesion in the rib was the result of an acute pyogenic infection; the pleural pain preceded the local tenderness; the location of the lesion is against it; there was no change in the overlying skin; and the regional subcutaneous lymph nodes were not enlarged. Furthermore, leukocytosis was absent, and the sedimentation rate was normal.

Tuberculous osteomyelitis is a possibility, but the process seemed a little rapid and painful for this disease. In attempting to draw the findings together, I cannot believe that there was disseminated tuberculosis in the lungs. Certainly, tuberculous osteomyelitis may exist without another demonstrable focus of disease or laboratory findings indicating infection. However, tuberculosis is unusual in a rib and is not entirely osteolytic, as this lesion appeared to be.

The location and x-ray appearance are against syphilis, and surely actinomycosis of a rib would be secondary to a large pulmonary lesion. From the x-ray evidence only, echinococcus disease might be considered, but the cyst usually grows more slowly and is painless. The history does not support this diagnosis, and apparently there was no eosinophilia; skin tests were not mentioned.

There was no clinical or laboratory evidence of metabolic bone disease. The serum calcium, phosphorus and alkaline phosphatase were normal, and the kidney function was unimpaired as far as it was investigated. No change was demonstrable in the rest of the skeleton.

Of the xanthomatoses of bone, I should consider seriously only eosinophilic granuloma. This condition often produces a solitary lesion in a rib of fairly abrupt onset. There is pain, tenderness and swelling, and bone destruction reaches a maximum in a few weeks. Usually, the bone is rarefied, and the shell is expanded, but may be totally destroyed.

Monostotic fibrous dysplasia is common in a rib, but the x-ray appearance is different and this patients syptoms were too definite for that condition.

If the patient had a tumor, I believe that it must have been malignant. Having made that statement, one must decide whether the tumor was primary or metastatic. Again, the findings in the lungs come under scrutiny. Was the fine granular mottling an indication of metastatic tumor, and, if so, was it part of a generalized dissemination of tumor or was it secondary to the tumor in the rib? In a somewhat uncertain tone, I shall say that the lungs did not contain tumor and furthermore probably had nothing to do with the immediate problem. I should expect a patient with metastatic tumor in the rib, and the x-ray appearance of the lesion is consistent with this diagnosis. Yet one is not justified in making such a diagnosis without at least a clue to the location of the primary tumor. In this regard the kidneys, prostate, stomach, lungs and thyroid gland should be examined as thoroughly as is practical. The unobtrusive growth of cancer of the pancreas and difficulty in examining the region make this disease notoriously treacherous.

It is often difficult to differentiate the various malignant tumors arising in bone by any means short of microscopic examination. Even then the pathologist sometimes resorts to masterful hedging, a skill at which he should be highly proficient and without peer, the roentgenologist excepted. Like the drowning man, one must clutch at straws. The patient's age does not help me in the least. It has influenced me in dismissing certain diagnoses, but in the end I shall disregard it.

Osteogenic sarcoma is uncommon in a rib, and the appearance of the x-ray film in the case under discussion is not consistent with this tumor in its usual form. I should be happier if I could forget the osteolytic sarcoma that does not produce ray formations.

Chondrosarcoma may destroy bone in this fashion. In early lesions the tumor is often situated outside the bone proper, and the marrow is not involved. It may have a lobulated contour, and frequently the histology is not uniform and calcification takes place so that blotchy areas of increased density are seen in the x-ray film. Chondrosarcoma may arise in a chondroma, but the patient had not noticed swelling in the rib before the rapid development of the present lesion.

Lymphoma cannot be dismissed despite the fact that this was a solitary lesion. Conceivably, there was diffuse pulmonary involvement, but the possibility seems highly unlikely. There was no apparent lymph-node enlargement or splenomegaly and no aberration in the blood count in the form of either leukemia or anemia. Solitary lesions of bone in lymphoma are distinctly uncommon and usually arise as reticulum-cell sarcoma in a long bone of an extremity.

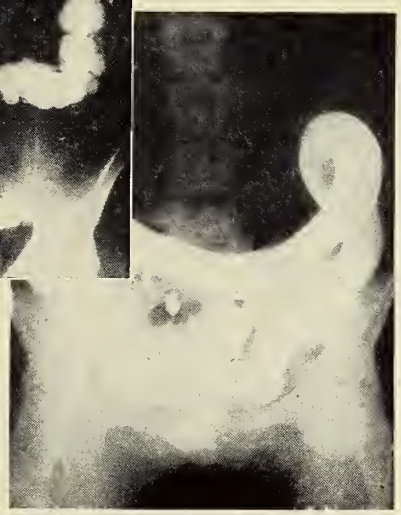
Myeloma is common in the ribs and does not stimulate new-bone formation; pain may be a feature of the disease. In general, it is unusual for myeloma to extend beyond the cortex, and most frequently the bone is diffusely mottled and the break is not clean, but develops through a widened and rarefied area. Myeloma seldom grows to this size without appearing in other bones. Furthermore, the patient was young for the disease. Bence-Jones proteinuria was not mentioned; there was no indication of renal disease, and the serum protein was not elevated.

It seems very likely to me that this patient had Ewing's tumor, and the pain, swelling and slight elevation of temperature are consistent with this diagnosis. Yet the x-ray appearance of the lesion is not characteristic. The tumor had destroyed the cortex and classically this event

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SEARLE

stimulates the production of layers of periosteal new bone formation. Unfortunately, there are many exceptions to this textbook picture. Ewing tumor usually occurs at an earlier age and is most common in the shaft of the long tubular bones and in the pelvic bones.

In full anticipation of a curve ball or a looper crossing my blind spot, I shall single out two conditions as the best possibilities — namely, Ewing's tumor and eosinophilic granuloma. Admittedly the patient was rather old for either of these conditions. Nevertheless, my first choice is eosinophilic granuloma because the glove seems to fit; in brief, a rapidly developing solitary lesion in a rib accompanied by pain, tenderness, slight fever and a mass that on x-ray examination is seen as an osteolytic lesion with soft-tissue swelling.

Clinical Diagnosis

Inflammatory tumor of sixth rib.

Dr. Sniffen's Diagnosis

Eosinophilic granuloma of rib.

Anatomical Diagnosis

Eosinophilic granuloma of rib.

Pathological Discussion

Dr. David Kahn: Dr. Sniffen seems to have had no trouble in knocking our best pitch clear out of the park. Preoperatively there was no great unanimity of opinion about the diagnosis; primary malignant bone tumor, metastatic cancer and inflammatory process were considered as possibility, with the last condition considered the most likely. However, because primary malignant bone tumor was still a strong possibility, the chest-wall tumor was resected en bloc, including the entire sixth rib along with short segments of the fifth and seventh ribs adjacent to the tumor; when the chest cavity was open, it was seen that the pleura was covered with fibrin and gave evidence of inflammation, although the underlying lung substance appeared to be soft and showed no abnormality. When we examined the specimen in the laboratory we found that there was a mass measuring 5.5 by 2 by 1.5 cm. occupying and replacing the midportion of the sixth rib. A thin, expanded remainder of cortical bone of the rib surrounded the anterior, superior and inferior portions of this enlargement; posteriorly, there was an area in which cortex could not be made out, and the mass extended posteriorly and was adherent to a small piece of attached parietal pleura. The tumor was soft and somewhat mushy and was dark yellow. There was abnormal mobility of the rib at the involved region. The adjacent ribs were not remarkable. Histologically, a large portion of the mass was necrotic; however, there were well preserved areas that showed typical eosinophilic granuloma. In these areas there were broad bands of mature eosinophils, with small focal areas of mononuclear phagocyts or histiocytes scattered throughout. Almost all the cancellous bone of the rib in the involved area was replaced. The granuloma extended to, but not through, the parietal pleura.

Four months after operation, the patient was asymptomatic; the physical examination was negative, and the radiologic changes in the lung parenchyma were still present. I suppose we can assume that the pleural friction rub and small amount of pleural fluid were secondary to irritation of the parietal pleura by the tumor mass.

Addendum

DR. J. GORDON SCANNELL: There is little to add to Dr. Sniffen's excellent analysis of the problem. Those of us who were charged with the clinical managment of this patient took refuge in the term "inflammatory tumor". Believing that the best way to establish the diagnosis was by radical-excision biopsy, we proceeded on the basis that tumor had not been excluded. One can employ this radical approach in an expendable bone such as rib and yet produce surprisingly little functional damage to the chest wall. As surgeons we have been impressed by the dismal course of patients in whom a rib tumor is actually cut into at the time of its removal, especially if malignant.

Dr. R. S. Shaw and I have recently reviewed the experience at this hospital with solitary eosinophilic granuloma of rib. This represents the fourth such case. The association of severe pain disproportionate to the radiologic findings was strikingly constant. The patients were all of the young-adult age group. All did well after excision of the involved rib or liberal portions thereof.

I am chagrined that we did not obtain a biopsy of the lung at the time of rib resection. The pleural surface showed considerable fibrinous thickening, as Dr. Kahn has stated.

64th Annual Meeting, Arizona Medical Association — May 4-7, 1955. Headquarters El Conquistador Hotel, Tucson, Arizona.

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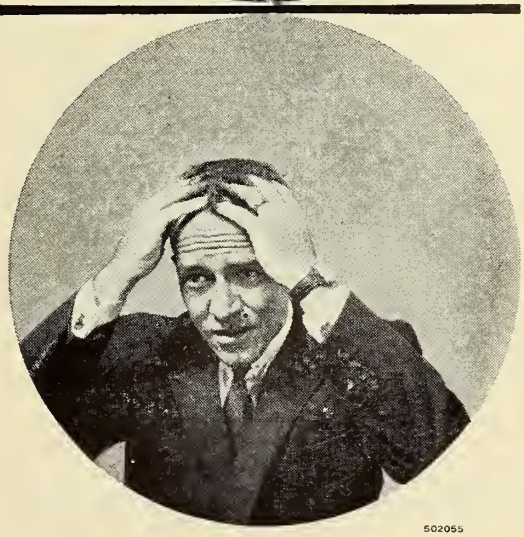


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THE *President's* PAGE

STATE OF ARIZONA — TWENTY-SECOND LEGISLATURE FIRST REGULAR SESSION

Measures Introduced of Interest to Medical Profession

H. B. 14 GROSS INCOME TAX
IMPOSES A TAX UPON THE GROSS RECEIPTS FROM WHATEVER SOURCE, OF ALL PERSONS, WITH, SPECIFIED RATES.

H. B. 26 NATUROPATHY
PROVIDES THAT THERE SHALL BE 5 MEMBERS (NOW 3) ON THE NATUROPATHIC BOARD AND DEFINES AND PROVIDES FOR THE REGULATION OF THE PRACTICE OF NATUROPATHY.

H. B. 28 SALES TAX
EXEMPTS FOOD PRODUCTS AND MEDICINE FROM SALES TAX. DEFINES FOOD PRODUCTS.

H. B. 31 MIDWIVES
PROVIDES FOR THE LICENSING OF MIDWIVES SUBJECT TO RULES, REGULATIONS AND QUALIFICATIONS WHICH SHALL BE ESTABLISHED BY THE BOARD OF HEALTH.

* * *

S. B. 18 PUBLIC HEALTH
MAKES TECHNICAL CHANGES IN THE LAW TO MAKE IT LEGALLY POSSIBLE TO ESTABLISH AND OPERATE COOPERATIVE PUBLIC HEALTH DISTRICTS.

S. B. 20 TUBERCULOSIS
PROVIDES FOR THE COMPULSORY ISOLATION OF ALL INFECTIOUS CASES OF TUBERCULOSIS AND PROVIDES THAT THE COUNTIES AND STATE SHALL PAY COST OF SUCH ISOLATION AND TREATMENT WHEN PATIENT IS NOT FINANCIALLY ABLE TO DO SO. GIVES BROAD POWERS TO STATE DEPARTMENT OF HEALTH OVER TUBERCULAR INDIVIDUALS. APPROPRIATES $250,000 FOR PURPOSES OF THIS ACT. EMERGENCY.

S. B. 23 PUBLIC HEALTH
PROVIDES THAT THE ANNUAL SALARY OF THE COMMISSIONER OF THE STATE DEPARTMENT OF PUBLIC HEALTH SHALL NOT BE LESS THAN $10,000 PER YEAR (NOW MAY NOT BE *MORE* THAN $10,000).

THESE AND OTHER IMPORTANT BILLS ARE BEING REVIEWED BY YOUR LEGISLATION COMMITTEE. IF YOU HAVE ANY QUESTIONS OR SUGGESTIONS TO OFFER, CONTACT YOUR CHAIRMAN, DOCTOR MILLARD JEFFREY, 411 SECURITY BUILDING, PHOENIX.

Editorial

ARIZONA MEDICINE
Journal of
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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

CANCER SEMINAR

COMPLIMENTS and thanks are to be extended to the Arizona Division of the American Cancer Society in conjunction with the Arizona Medical Association for the presentation of the Third Annual Cancer Seminar at Paradise Inn, January 13-15, 1955. This was an excellent meeting. The speakers were well chosen; their discussions were illuminating and interesting. Presentations of this quality will do much to desiminate knowledge and interest in this major problem — Cancer.

It seems appropriate to encourage Arizona Chapters of the American College of Surgeons or of Physicians to have Seminars in this area. Good participants are obtainable without undue difficulty or expense. We would strongly encourage this step. —D.W.N.

THE
SIXTY-FOURTH
ANNUAL
MEETING
Arizona
Medical
Association, Inc.
May 4-7, 1955
Tucson, Arizona
Headquarters
El Conquistador Hotel

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

THE biggest medical news, the biggest medical gamble, and the greatest hope in POLIOMYELITIS may be known by the time this item is published. Is DR. SALK'S VACCINE a success? He is hopeful. Dr. Francis is starting to analyze the data, using a heretofore confidential 'key'. The National Foundation is confident and hopeful, but on a limb, since it had to place the costly order for 1955 without complete data on 1954 . . . It is possible that booster doses may be necessary for the best effect, but some studies show a longer persistance of antibodies than had been expected . . . Here's hoping!

This paragraph is NOT FOR PEOPLE OVER AGE 60 unless they are perfectly adjusted . . . W. H. Masters of St. Louis describes people in whom gonadal function cease at that age as the "neutral gender". Says he to the American Geriatrics Society, "During our sixties we are essentially intact from a humoral point of view, and perfectly capable of functioning as efficiently as younger persons, with the exception that WE ARE ESSENTIALLY CASTRATES ". . .WE", he says, and he is listed in the A.M.A. directory as being born in 1915! . . . He favors the initiation of replacement therapy at the onset of climacteric or menopause, not waiting to "reclaim". He uses a ratio of 1 to 20 of estrogen and androgen.

The male climacteric may be so vague that TESTOSTERONE is of no great or frequent use, but the drug is being used in larger amounts for the female menopause, for protection from breast metastases, etc. . . . The side effects, such as masculinization, are expected. The occurence of LIVER DAMAGE (with jaundice) has been noted, and should be given another mention. Kinsell described it in 1948, and Almaden and Ross reported it a year ago in the Annals of Int. Med. . . . The mode of action of (methyl) testosterone is not certain. It results in an increased urinary excretion of 17-ketosteroids. It causes a creatinuria. It may be due to an intermediary product of the drug, but it can happen.

Here is another comment on BLACK WIDOW SPIDER BITES, linked with the name of a versatile physicians. It is more fun that way. . . . Dr. Emil Bogen is a famous bacteriologist, chemotherapy researcher, amazing statistician, etc. One of his side interests is poisoning by the lactodectrus mactans, and he has told the American Association for the Advancement of Science that he has treated 200 cases in 30 years. Spider bites poison thousands every year in the U.S., and most of the spiders are black widows. About five per cent of the bites are fatal. . . . Prevention by spraying has only recently become effective, and lindane or chlordane in kerosene works well . . . Antiserums are effective in preventing death and controlling the agonizing pain, but calcium gluconate is not only more available but more dramatic.

Medical trade-journals can be used as a guide to the drugs which are 'hottest' at the moment . . . A recent issue of 'Modern Medicine' had fifteen advertisements for various RAUWULFIA-RESERPINE derivatives. Ten of the fifteen ads were by two aggressive companies with (natcherly) the 'best' products.

Arizona SHOULD be kept free of ragweed and many other plants with allergenic pollen. The relatively pollen-free air should be preserved . . . It can be, since most of the plants grow along the roadsides, and since there are now plenty of materials which act as WEEDKILLERS, or as the more modern 'SOIL STERILANTS' . . . 24-D (or 2,4-dichlorophenoxyacetic acid) is the best herbicide for broad-leafed plants, and works by growth regulation . . . Arsenic-containing solutions are widely useful against a wide variety of grasses and plants . . . Chlorates, plus borates to eliminate the fire-hazard, are similarly effective in solution, or as the dry chemical . . . The highway department will consult on treatment of private projects, and can tell you where to get the materials and when to use them.

The uncertainty which most of us have concerning the RELIGIOUS IMPLICATIONS OF NECROPSY have been cleared by Tweeddale in MINNESOTA MEDICINE . . . The physician must be armed with correct knowledge and convincing arguments if he is to secure permission. . . Necropsy is fully accepted by the Catholic Church if done with proper respect and safeguards. (They are against cremation) . . . The Orthodox and conservative branches of the Jewish Church are generally opposed to necropsy. The Reform or Liberal faction of the Jewish Church are in favor of necropsy . . . The Christian Science Church is against necropsy except when a member "shall decease suddenly, without previous injury or illness, and the cause thereof be unknown, an autopsy shall be made by qualified experts" . . .

HBA FOR SECURITY

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by Hospital Benefit Assurance, First Street at Willetta, Phoenix February, 1955

Question QUIZ
Do you know the answers?

Q. Why is it important for a policyholder to have a hospital plan that gives the Right to Renew?

A. Let's assume the policyholder pays premiums monthly. Technically, the policy is renewed once a month. If the policyholder does not have the Right to Renew, the company can refuse renewal by refusing to accept the premium payment, thus depriving the policyholder of any further benefits. This would work a particular hardship on a person developing a recurring illness requiring repeated hospitalization, as he would be unable, because of his recurring condition, to seek coverage from another company for that condition.

Q. Does the HBA Surgical Plan pay benefits for home calls or office calls for treatment of accidental injuries?

A. Yes. HBA surgical schedules provide for treatment of accidental injuries anywhere, provided such treatment is administered within 24 hours after the accident. The HBA does not, however, pay for medical treatment of illness or for non-accident treatment or surgery outside a licensed hospital.

Q. Is there any way I can help HBA speed the payment of my bills?

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Tell your patients . . .

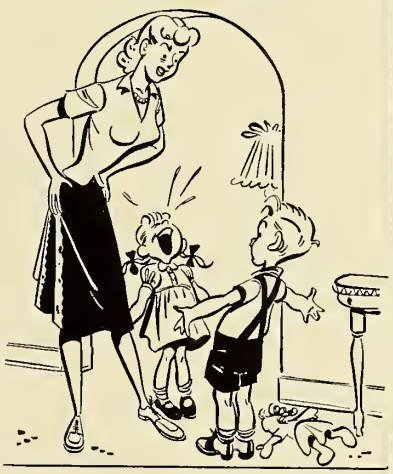
SURGERY FOR ILLNESS MUST BE IN HOSPITAL

"Let's just take those tonsils out right here in the office!"

Words like these, Doctor, may deprive patients of HBA Surgical Benefits without their fully realizing it. HBA does not and never has paid for operations for illness performed anywhere except in a **licensed** hospital. This provision is clearly set forth in the Hospital Policy and in the folder.

Most HBA patients are pretty well aware of their benefits. But, in the excitement of an impending tonsillectomy or other operation, they may forget some of the provisions of their Hospital Policy.

So, you'll be doing your HBA patients a favor by reminding them that surgical treatment for illness may **not** be performed outside a licensed hospital if Surgical Benefits are to be paid.



"It was just a little horseplay . . . Sis bit me and I kicked her!"

Following is an excerpt from an article in the bi-monthly BULLETIN mailed to HBA policyholders explaining, briefly, how to use their Surgical Plan benefits. It will give you a pretty good idea of when your HBA patients are and are not eligible for Surgical Benefits:

SURGICAL PLAN BENEFITS

A. For a scheduled operation in a hospital:
You will receive benefits for surgeon's and anesthetist's fees for illness when surgery is performed providing the operation is performed in a hospital.

B. For emergency treatment or surgery not in a hospital:
Surgical benefits will be paid for emergency first aid or surgery performed anywhere, if it is the result of an accident and within 24 hours after the accident. Surgical benefits are not payable for calls to doctor's office or home calls by doctor unless for treatment of accident as stated above.

WHY THE RIGHT TO RENEW?

You undoubtedly have had patients with hospital insurance who have developed a chronic illness or suffered a recurring injury, only to have their protection taken away by the company after payment of the first hospital bill. A high percentage — 92%, in fact — of hospital policies are renewable at the option of the company only.

This calamity can be avoided by enrollment in a hospital plan that cannot be cancelled by the company and is renewable at the option of the policyholder. These policies are placed in the general category of **"Non-Cancellable and Guranteed Renewable."**

In plans of this type — such as the HBA plans which are Guaranteed Renewable to age 65 and Non-Cancellable — the company must continue the protection as long as the policy holder has the right to renew.

The major Protestant Churches have no writings or attitudes against necropsy, and accept it from the religious standpoint.

Another report on therapy for TIC DOULOUREUX combines some common plus unusual ingredients . . . First is the number of cases — 16. No one ever seems to have more . . . Second is the drug, Stilbamidine, which is now being tried for a great variety of ills. It is given I-V for 14 days . . . Third is the effect, said to be "relief of the symptoms for the period of observation" . . . Finally, the complication, "late chronic neuropathy". Progressive sensory changes of paraesthesia, hypalgesia, and anaesthesia, (evoked specifically for this condition), are usually confined to the face, and are noted 2 to 5 months after therapy! . . . This would seem to be the 'hard way', similar to knocking out the vestibular function with overdoses of streptomycin.

People say some awful things about HOLLYWOOD, and some of them may be true. Some of them may be based on misinterpretation, however, and herewith is an example to show why it takes only a little imagination if you have a basic idea — In yesterday's mail was an advertisement from Krupnick's Rentals and Sales' company, Hollywood. The top of the letter says — "HEADQUARTERS FOR ALL YOUR NEEDS IN PARTY AND SICKROOM SUPPLIES" . . . You don't have to be crazy or mixed-up to be confused by THAT one!

The columnist and editor, Dr. W.C.A., probes into the problem which is so dear to the heart of those who believe that BODY AND MENTAL FUNCTIONS are strictly the result of CHEMICAL REACTIONS . . . Hormones, enzymes, gas transport, nerve and muscle reactions, etc., are all pretty well labelled now in that respect . . . The foetus will be a feeble-minded child if it cannot get rid of phenylpyruvic acid. The hereditary inability to excrete porphyrins usually results in a neurotic state. Sedatives such as alcohol, barbiturates, et al., cause insane-type actions. A woman with too much estrogen present during her 'lunar' menstrual periods may then be a different personality . . . Experimental fish, and even humans, have developed 'schizophrenic' pattern when given small amounts of a drug called LSD 25 (lysergic acid diethylamide) . . . It takes only a small amount of imagination to believe that Scrooge or Dr. Jekyll had a chemical alibi or that we can plan on changing personalities in the near future.

The word 'sunshine' reminds one of HELIOTHERAPY, which reminds one of the Tucson Medical Center, because that was once the 'Desert Sanitarium', because that was where they had the best facilities on this continent for studying sun irradiation . . . (The way we heard the story, Dr. Jerry Metzger had the idea for such a place and went abroad to study the subject with Rollier in Switzerland. When he got back someone else had obtained the money and built the place) . . . This in turn reminds one to mention the first large recent series of bone and joint TB in children, reported by Modena of Vienna. An old-time series of 363 children treated with heliotherapy and general measures has been compared with 115 children treated with streptomycin and PAS. To be very, very brief, the chemotherapy is better, but prolonged bedrest and supportive measures are still required. . . . Wilkinson of London, England, has treated a smaller series with chemotherapy. Allowing for possible unsatisfactory dosage, and duration, he thinks the differences from the pre-drug are not great, due to poor penetration into necrotic bone areas, through an endarteritis. The reliance on drugs alone may give precarious results.

We heard some HOT-STOVE PHILOSOPHY one recent Saturday night as three docs gratefully clinked the ice in their classes of soda pop. One had just passed his State Board exams, and he moaned, "'That's it! That's the last! I've been passing exams ever since I got out of school. I've had it!" . . . One of his pals raised an eyebrow. "Oh no you're not through! You'll be taking your American Board next, and probably more later. When you quit you're dead, one way or another!" . . . The second pal nodded in agreement. "'Sure. And that isn't the only way you have to get by. You have to sell yourself to almost every new patient. Very few are sold on you by someone else. With some you have to prove it all over, every six months!"

An index of how 'dirty' we are or, more specifically, how far our hospitals are from being aseptic, is the number of RESISTANT STRAINS OF BACTERIA present in throats and infected wounds in hospitals . . . Howe tells of the causes and implications in a fine New England Journal of Medicine report. Staph. aureus is the chief bacterial offender. Penicillin is the antibiotic to which most strains are resistant, though general use of the new drugs is reflected in a high rise of resistant strains in personnel and patients . . . Most seriously, the incidence of major and minor wound infections in his hospital has increased steplike yearly for five years, from 1.09 to 3.98 per cent . . . The solution is to move at once to greater care and asepsis in surgical procedures. Other cures can come later, perhaps.

This brief story has to do with ALCOHOLISM, and is therefore remotely medical (though alcoholism should not be a subject for jokes) . . . A dignified woman went to a cocktail party and had a stronger drink than she was used to having. On being asked how she felt, she considered the matter and brightly replied, "I feel more like I do now than I did when I came."

Organization PAGE

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

The Health Insurance Council, James R. Williams, Vice Chairman, 208 South LaSalle Street, Chicago 4, Illinois:

THE HEALTH INSURANCE STORY: Publication of the first comprehensive statement of policy, purpose, and practice by the insurance companies which provide health insurance is announced by the Health Insurance Council, a confederation of the nine insurance trade associations whose insurance company members now collectively account for more than seven-eighths of the total accident and health business in the United States.

Entitled "The Health Insurance Story," this new booklet was in preparation for more than two years. It represents an effort by the council to provide physicians, hospital administrators, and others with a clear and useful explanation of the insurance company point of view about health insurance.

Note: We have previously referred to this booklet and recommended it to the physician. Portions present subject matter of value to the office secretary as well.

* * *

You have been advised on this page of the percentage of money that remains in your locality, that which goes to the state, and that which is sent to the national organization of many volunteer agencies. You have been told the part of the dollar that is expended on research; and the percentage that is spent on administration at all levels. You have been advised of the number of agencies at a national and international level that spend our volunteer dollar as opposed to the number of government (welfare) agencies.

We are writing several of our contributors, our contributors are limited to volunteer agencies, and asking the following question: "How does my volunteer dollar affect me personally, how has it affected my patients in the year 1954? How will it affect us in 1955? We live in many sized towns and every county.

This should be a stickler for many of these agencies' object is an unknown disease or condition. How can they explain money spent for research unless the disease was found or a treatment invented in the year 1954?

Other agencies' objects are diseases that are infectious and communicable and control of these calls for police action by the health officers of the various political subdivisions. How can this agency prove its effect on health officers?

Other of these agencies' objects are the product of low living standards and spread through an uneducated public. How can education at the early grade levels be shown to affect the medical profession personally?

Other agencies' objectives point toward rehabilitation for the major portion of their program. Such agencies may have scored very low last year in our practices. Can these agencies score high for 1955 if an informal medical profession knows the services that are available?

Maybe locally, in your town and country, nothing has been done except to bank the money or send it to the state or national organization (if such is the case you have a gripe – you could better spend it yourselves).

We anticipate lengthy letters from our contributors and will follow our usual custom of not quoting "in toto" but lift out what we consider to be the pertinent matter.

* * *

A PLATFORM ON THIS PAGE IN THE AUGUST, 1954 ISSUE. WE REFER TO ONE SECTION OF A PLATFORM OF A CANDIDATE FOR THE OFFICE OF ARIZONA STATE SUPERINTENDENT OF PUBLIC INSTRUCTION.

The new State Superintendent of Public Instruction has publicly called for committee activity between his department of state government and the State Health Department.

Another section of that same platform dealt with safety education. In this state, driver education and all phases of motor vehicle operation is assigned to the State Highway Department. This is unique in the United States. The writer is watching to see how the Superintendent

of Public Instruction will arrange to enter this field of activity.

Educators everywhere are programing toward a department or section of health, safety, and physical education. The Phoenix Union High School and College System has already taken steps in this direction. The move of the State Superintendent of Public Instruction aimed at correlating his department activity with the Health Department is the beginning of such a program at the state level and may be the means of real progress in the elementary, the high schools, and even at a college level.

* * *

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 111 East Willetta, Phoenix, Arizona.

Educational efforts of the Arizona Tuberculosis and Health Association and its local affiliates are being linked with those of the Arizona Medical Association to secure passage by the 22nd Legislature of more adequate measures to control tuberculosis in Arizona. Millard E. Jeffrey, M.D., Phoenix is chairman of the Legislative Committee for both Associations.

An increase in the number of contributors to the Tuberculosis Associations' 1954 Christmas Seal Sale is evidence of citizen interest in doing more about Arizona's No. 1 public health problem. A recent release by the National Tuberculosis incidence and deaths in the United States shows Arizona has made little or no progress in either category in comparison to neighboring states or the United States as a whole. The rate of newly reported active and probably active cases in Arizona was 163.2 for 1953 while the average for continental United States was 52.6 and the death rate in Arizona was 29.5 as compared to 12.3 for the country as a whole. Translate these cold figures into hard cold facts that Arizona had 1518 reported active cases of tuberculosis in 1953. Aside from the personal costs and suffering of the patient and his family, this represents a staggering loss of man-hours work, diminished buying power and consequent economic loss.

Other states have had this problem and faced up to it. The proposed Tuberculosis Control Act for 1955 has been prepared to apply proven methods to reduce the tuberculosis problem in Arizona. Let's work together for its passage.

* * *

UNITED CEREBRAL PALSY ASSOCIATION OF CENTRAL ARIZONA, INC., 718 Security Building, Phoenix, Arizona.

The United Cerebral Palsy Association of Arizona is completing plans for the establishment of a Sheltered Work-Shop type of activity. This will employ the Cerebral Palsy handicapped in the bottling of cosmetics to be distributed in each community throughout the state. The Cerebral Palsy patient will find this a source of employment as it will be sold on a cooperative partnership basis.

Patrick C. Downey is the president of the Arizona group.

The Central Arizona section, Fred N. Porter, Jr., recently elected president, is active in this new work venture.

* * *

A representative of the Luke-Greenway Post No. 1 American Legion, here in Phoenix suggested that inasmuch as the writer had given up exercise as such personally, that he should actively participate by proxy else the ageing process would be so rapid as to be dangerous. His prescription was that of buying a Junior League ball player, that is paying for the boy's expenses for the 1955 season in the amount of $18.69.

No doubt the Legion Post in your town will cut you in on this deal.

Phoenix physicians contact Bill Brock, Commissioner, Luke-Greenway Post Baseball Committee, 364 North 7th Ave., Phoenix, Arizona.

E.E.N.T. PHYSICIAN 41

Board Eligible Ophthalmology

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Book REVIEWS

HANDBOOK OF MEDICAL TREATMENT, Fourth Edition; Lange Medical Publications, P. O. Box 1215, Los Altos, California; 1954; Price $3.00.

THIS little book is a very excellent and up-to-date compilation of a surprisingly large amount of medical information. It is as if the "meat" of all medical school lectures and subjects taught in medical school had been systematically arranged, abbreviated, tabulated, and indexed, and placed in one book for reference. It is doubtful if there is another book which contains all of this information in readily accessible form and still is small enough to be carried in the coat pocket. It is the answer to the medical student's prayer, and every practicing physician will find it a convenient source for frequent reference and find it well worth the small space it will occupy on his desk. Not only will he find the simpler or more elementary medical facts given, such as for instance, illustrations of the various bed positions together with their indications, but he will find also the more complex medical subjects presented clearly and in quickly assimilated form. For example, the discussion of the electrolytic system of the body is excellent. We feel certain that almost every physician who sees this book will want to keep it for his library.

NATIONAL HOSPITAL WEEK

EACH year the nation sets aside one week in which to become better acquainted with its hospitals. National Hospital Week in 1955 will be May 8-14. During this week the attention of the American public is focused on our hospitals, in which one out of every eight of us receives care each year. The theme of National Hospital Week in 1955 will be "Your Hospital . . . A Tradition of Service."

National Hospital Week is sponsored annually by the American Hospital Association. Celebration of a National Hospital Day began in 1921 and was expanded to a week in 1953. National Hospital Week is traditionally built around the May 12 birthday of Florence Nightingale, the famous nurse crusader of the Crimean War, whose pioneer service led to the improvement of hospital care in both England and America.

BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

411 Security Building, Phoenix, Arizona

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, January 15, 1955 issued certificates to practice medicine and surgery in this State to the following doctors of medicine:

BAGBY, GARLICK H., Copper Queen Hospital, Bisbee, Arizona.

CHAFFIN, W. T. CADMAN, 129 E. Fifth, Benson, Arizona.

CURRIN, JOHN F., 1301 N. Beaver St., Flagstaff, Arizona.

DOLESE, DAVID B., Sage Memorial Hosp., Ganado, Arizona.

EBERLING, ERNEST W., 110 S. Scott, Tucson, Arizona.

FARABEE, CHARLES R., Broadmoor Med. Center, 209 S. Tucson Blvd., Tucson, Ariz.

FLINT, CHARLES HOUSE, Hart, Michigan.

GOFF, FRED L., Copper Queen Hosp., Box 388, Bisbee, Arizona.

HOSTETTLER, DAVID P., Ganado Mission, Ganado, Arizona.

JOHNSON, ARTELL E., 34 N. Macdonald, Mesa, Arizona.

KENT, GEORGE B., JR., 550 W. Thomas Rd. Phoenix, Arizona.

McGAREY, WILLIAM A., 4320 E. Thomas Rd., Phoenix, Arizona.

ROWLEY, DEAN ANDERSON, 202 Westminister Ave., Salt Lake City, Utah.

SAGE, CLAUDINE N., 444 Mission, Apt. 7., S. Pasadena, Calif.

SMITH, HUGH H., 3134 Via Palos Verdes, Tucson, Arizona.

TRUE, DONNA LEA HAMMER, 1690 Milwaukee, Denver, Colorado.

WARNER, ARTHUR L., Crown Point, New Mexico.

●

Attention Doctors Keep your 1955 *Medical Directory up-to-date. Similar lists will be published quarterly following each meeting of the Board of Medical Examiners. Tear out this listing and keep it in your Directory Booklet.*

Notes from the EDITORS PEN

SPECIAL REGISTRANTS FOR ARMED FORCES

Physical examination of physicians up to age 37 is being requested.

A call for 1275 physicians to be delivered in March, 1955 has been placed by the Selective Service System, and to meet the call it is necessary that Priority I, all ages; Priority II, without restriction as to months of service; and Priority III born on or after January 1, 1917 be used. Every effort is being made to get available for service all those Priority II young registrants born after August 30, 1922 in this call to protect men of that priority who are older.

MEDICAL SERVICE PLANS

The AMA Board of Trustees announced the appointment of a 13-member Commission under the chairmanship of Doctor Leonard W. Larson of Bismark, N. D., member of the Board, to make a comprehensive survey of the various types of plans through which the American people receive medical services. A year will be required to complete such survey.

VETERAN'S HOSPITALIZATION

Seaborn P. Collins, National Commander of the American Legion, addressing the House of Delegates in Miami last December said he is willing to appoint qualified Legion representatives on a committee to take part in joint Legion-AMA study of veteran's hospitalization. The Board of Trustees appointed a three-man committee to meet with the Legion on the issue of veterans' medical care composed of Doctor Elmer Hess, Doctor David Allman, and Dr. Louis Orr. Mr. Collins said: "We are citizens first and doctors and veterans second," as he urged removal of the veterans' medical care issue "from the area of name-calling and propaganda." The American Legion neither expects nor wants the Government to give carte blanche entitlement to medical care to all veterans.

HEALTH REINSURANCE

Mrs. Oveta Culp Hobby, Secretary of Health, Education and Welfare, addressing the House of Delegates in Miami last December, presenting the case for the Eisenhower administration's health reinsurance proposal said: "The health reinsurance proposal represents what we believe to be a necessity. It offers opportunity for self-help without subsidy." Edwin J. Faulkner, President of the Woodmen Accident and Life Company of Lincoln, Nebraska, on similar occasion, expressed the opinion that the resinsurance program "would be foredoomed to disappoint its proponents," declaring that voluntary health insurance can bring satisfactory protection "to practically all of our people" without a Federal reinsurance program.

RADIOLOGY ANNUAL MEETING

The regular annual meeting of the members and fellows of the American College of Radiology is called for Friday, February 11, 1955, at 10 a.m., Drake Hotel, in Chicago. Illinois.

WHO MAY DO SURGERY?

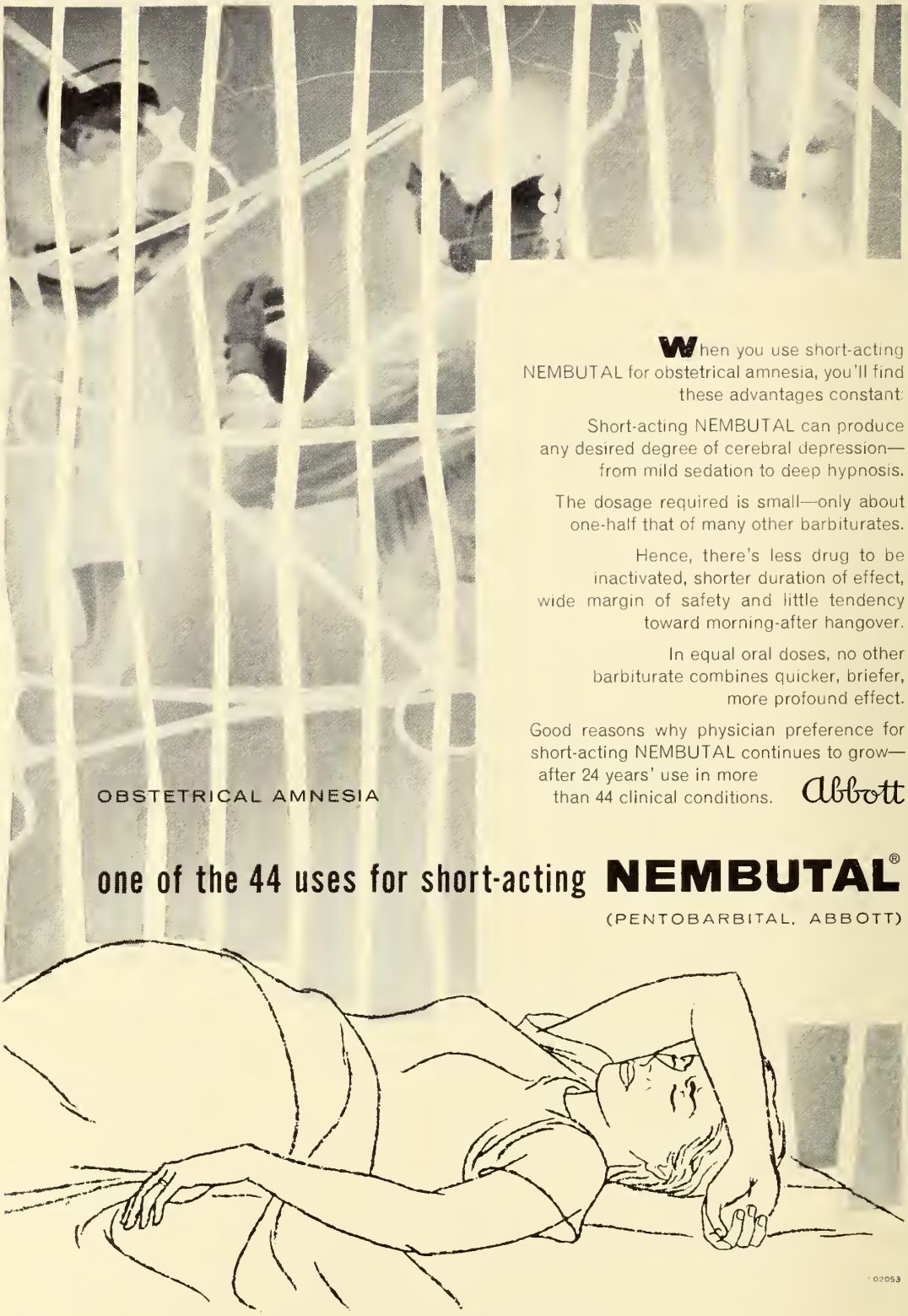
Quotation from Bulletin of the Joint Commission on Accreditation of Hospitals: "There is no specific answer to the above question. Good surgery cannot be measured blindly by years of residency, preceptorship or number of operations assisted at or performed. Certain individuals, no matter how long or where their training, will never become good surgeons.

"Formal resident training, College of Surgeons, Fellowship or Board Certification are all excellent criteria and a physician desiring to do surgery should be encouraged to set them as his goals. Recognition of the worthwhileness of the above evaluations. The frank, brutal truth remains, however, that they sometimes, though not often, are only a piece of paper; that time can warp a man's judgment and poor health can slow the facilities of a surgeon's hands until he becomes a dangerous man in the operating room.

"Merit alone is the only criterion for judging physicians' surgical abilities. This judgment should be performed by those capable of judging other qualified surgeons, by those who are willing to accept the responsibility and to attest to the public and community that in our judgment this man is capable of doing good surgery'.

"In our present medical setup this means that a staff surgeon should be judged by those other members of the staff who have seen him work, use his judgment and exercise his ability. It becomes a local personal equation in every hospital. It is a terrific responsibility. It can never be decided on a friendship, personality or class basis."

(Continued on Page 97)

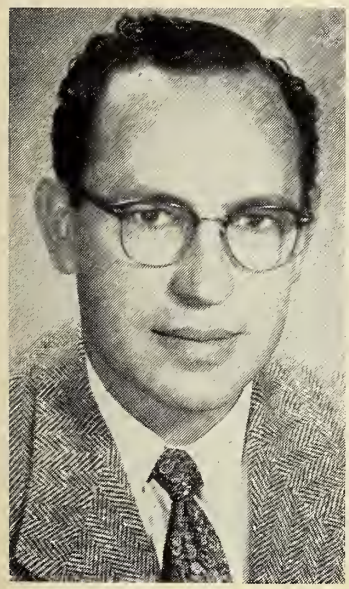

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RELATIONS BETWEEN OSTEOPATHY AND MEDICINE

The AMA Board of Trustees received and approved, and the House of Delegates adopted a progress report from the committee appointed some time ago to study the relations between osteopathy and medicine. The committee, headed by AMA Past President John W. Cline, held several meetings with the Amercian Osteopathic Association. After these meetings and extensive negotiations, the committee made final arrangements for visiting five of the six schools of osteopathy. Doctor Cline since has appointed members of his committee and several participating deans to make on-campus visits of the five schools, beginning January 28. The committee's complete and final report is expected to be ready for submission to the House of Delegates when it meets at Atlantic City next June. The final report will cover the nature, scope and quality of education in schools of osteopathy.

ANNUAL MEETING— SCIENTIFIC SESSIONS

THE 64th Annual Meeting of your association will be held in Tucson, May 4-7, 1955, with headquarters at El Conquistador Hotel. Through arrangements made by the Scientific Assembly Committee, we are happy to announce participation of the following guest orators who will appear with others on the scientific sessions program.



Robert W. Oblath, M.D.

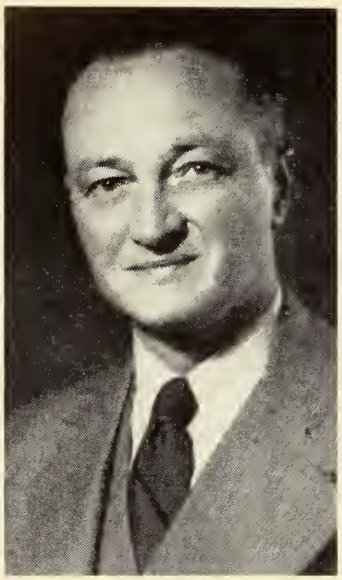
Graduate of the University of California, San Francisco & Berkeley, receiving his doctor of medicine degree in 1945, Doctor Robert W. Oblath interned in Los Angeles County Hospital 1945-46; as Assistant in Medicine, University of California Hospital, in San Francisco 1946-47; Assistant Resident, University of California Hospital in San Francisco, 1947-49; Research Fellow, American Heart Association, Institute of Medical Research, Cedars of Lebanon Hospital, Los Angeles 1949-50; and received appointments as Assistant Clinical Professor of Medicine, University of Southern California; Attending Staff, Los Angeles County Hospital; Clinic Physician, Cedars of Lebanon Hospital; Associate Staff, St. Joseph's Hospital, Burbank; Member, Cardiac Catheterization Group, Los Angeles County Hospital; Chairman, Publications Committee, Department of Medicine (Cardiology), University of Southern California; and Member, Cardiac Clinic at Cedars of Lebanon Hospital.

Member of Los Angeles County, California state and AMA national medical associations; Los Angeles and California Societies of Internal Medicine; Los Angeles County, California State (Cardiacs in Industry Committee) and American Heart Association; American Association for the Advancement of Science; American Federation for Clinical Research; Associate, American College of Physicians; and Certified (Diplomate), American Board of Internal Medicine (1953).



Lester R. Dragstedt, M.D.

Former Professor of Physiology, Northwestern University Medical School, presently Thomas D. Jones Distinguished Service Professor of Surgery and Chairman of the Department of Surgery, University of Chicago, Doctor Lester R. Dragstedt is a member of the American Surgical Association, the National Academy of Sciences, the American Physiological Society, the American College of Surgeons, and honorary member of the surgical societies of Paris, Lyon, Los Angeles, Seattle, Minneapolis, and Detroit.



Carl A. Dragstedt, M.D.

Educated at the University of Chicago and Rush Medical College, receiving his degree of doctor of medicine in 1922 and doctor of philosophy in 1923, Doctor Carl A. Dragstedt practiced medicine in North Dakota 1923-26; Professor of Pharmacology in Northwestern University Med. Sch. since 1926 and Chairman of the department since 1942; Chairman of the section on Experimental Medicine and Therapeutics, A.M.A., 1946-47; President of the Society of Pharmacology and Therapeutics, 1949-50; President of the Society for Experimental Biology and Medicine, 1951-53; Chairman of the Pharmacology Study Section of the U.S.P.H.S., 1951-53; and is a member of the Revision Committee of the U.S.P. since 1940 and of the Council on Pharmacy and Chemistry since 1949.

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

The lowest death rate in the history of the country and the largest annual number of births were forcast for 1954 by Dr. Leonard A. Scheele, Surgeon General of the Public Health Service of the U. S. Department of Health, Education and Welfare. Dr. Scheele made his statement on the basis of vital statistics reports for the first 10 months of the year.

The death rate for the year is expected to close at 9.2 deaths per 1,000 population, a substantial drop from the rates of 9.6 or 9.7 which have prevailed over the past five years. The absence of any reported outbreak of influenza in 1954, with consequent low death rates for the chronic cardiovascular diseases, was cited as a principal reason for the decline. Infant and maternal deaths were also expected to hit new lows.

Briths will top the 4-million mark for the first time, according to preliminary estimates. The expected birth rate of 25.2 per 1,000 population is the second highest in 28 years, and only 5.3 per cent below the peak year of 1947. A continuing rise in the births of third, fourth, and fifth children is probably responsible for the birth increases in 1953 and 1954. No increase in births of first children was expected because of falling marriage rates since 1951.

The marriage rate sank to 9.2 per 1,000 population in the first 10 months of 1954, compared with 9.7 for the same period the year before. Low birth rates during the 1930's, resulting in relative scarcity of young people of marriageable age in the present decade, were held chiefly responsible for the marriage decline.

Divorces in the first nine months of 1954 were down four per cent from the comparable 1953 period, on the basis of reports from 25 areas. Since the 1946 peak, divorce rates have dropped over 40 per cent.

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ARIZONA Pharmaceutical PAGE

NARCOTIC PRESCRIPTIONS

By Joseph A. Zapotocky, Ph. D.
Pharmacy College, University of Arizona

ALTHOUGH physicians and pharmacists are speaking in terms of relaxed controls on some narcotics to permit the pharmacist to fill certain narcotic prescriptions and refills of barbiturates telephoned by the doctor, some government agencies and officials are seeking increased controls. The Council of State Governments is in favor of restricting the dispensing of barbiturates to a written prescription. Telephoned prescriptions and authorizations for refills are too difficult to verify. Only in an emergency would a telephoned prescription be permitted, and, in such event, confirmation must be given in writing within seventy-two hours.

Recently, Attorney General Herbert Brownell voiced the opinion that the prescribing and dispensing of narcotics has grown lax and needs closer supervision. Though there has been an increased search for violators of laws concerning narcotics and barbiturates during the past few years, this heightened activity has led to the arrest and conviction during 1954 of only eighteen pharmacists and four store owners in the United States as narcotic violators.

Since it is the duty of the members of our professions to prescribe and dispense narcotics, it is also our responsibility to perform our duties in strict obedience to the law, else we may be liable to criticism from those who would impose even more rigid regulations on our professions.

Physicians are usually most familiar with the phases of the narcotic law which affect them directly — the annual narcotic tax, the registry number, the purchase of narcotics for office use from a wholesaler or manufacturer, and a record of their use. They, as well as the pharmacist, have to take proper precautions for the storage of narcotics, order forms, and prescription blanks. Theft and pilfering of these items must be prevented — they must be kept out of the reach of individuals who might be tempted to use them for illegal purposes!

The phases of the law which pertain to the pharmacist may be less familiar to the physician and will, therefore, be reviewed here as these regulations often appear to be mere inconveniences to a physician. However, the pharmacist must obey these regulations or face possible prosecution. The law requires a pharmacist to fill only those prescriptions which carry certain basic information. This includes the date, name, and address of the patient, name, address, and registry number of the physician; name and exact quantity of the narcotic to be dispensed; directions for use; and the signature of the physician. To prevent alteration, the prescription should be written in ink, indelible pencil or typewritten. The pharmacist is required to be on the alert for forgeries of the physician's signature, alterations, and fake prescriptions. the pharmacist can usually determine whether the physician's signature seems to be different and, if he feels that it is, he will call the physician to ask for verification. This rules out the writing of narcotic prescriptions by the secretary or nurse. It is illegal for a pharmacist to fill a telephoned narcotic prescription except in an emergency and, under such circumstances, the prescription must be received in writing before delivery is made. A narcotic prescription cannot be refilled — a new prescription must be given if the patient needs more of the same medication. The pharmacist is not permitted to sell narcotics to a physician for routine office use. Such supplies must be obtained from the manufacturer or wholesaler with the usual narcotic order forms.

There are other phases of the narcotic law which affect the pharmacist; however, in order for him to fulfill his obligations in the parts of the law just mentioned he depends on the cooperation of the physician. Only by team work on the part of all members of our professions can we prevent or challenge remarks which insinuate that we are lax in our professional obligations.

Interesting Topics

ABSTRACTS AND RECOMMENDED READING

(Current Medical Journals)

ALLERGIC SYMPTOMS IN INFANTS: Norman W. Clein, Rocky Mountain Medical Journ., November, 1954. The mechanism of allergic symptoms depends primairly upon three factors: (1) Edema of mucous membranes and certain areas of the skin; (2) Spasm of smooth muscle, such as bronchi or intestines; (3) excessive mucous secretions in various glands. It is easily understood how the allergic state may simulate almost any disease. Early recognition of this state in infants and adequate treatment and management will enable the individual to lead a normal life.

BENIGN LESIONS OF THE BREAST: John L. Marmichael, Journ. of the Med. Assn. of Alabama, November, 1954. A fairly thorough article. Three common lesions of the breast, fibroadenoma, fibrocystic disease, and papillomata, have the same basic etiology. Any one of these may become malignant and are, therefore, precancerous.

HISTOPLASMOSIS: A roentgenographic survey. Oliver and Associates. The Journ. of the Med. Assn. of Alabama, November, 1954. A brief resume of the pathology, epidemiology, diagnosis and treatment, based on 65 cases found in a routine x-ray survey of 29,229 individuals in 44 Alabama counties.

COUGH: Differential Diagnosis and Management. Joseph J. Furlong, Calif. Medicine, November, 1954. "'Cough is a complex defensive reflex whose purpose is to protect the respiratory tract . . . The meaning of cough as a symptom must be carefully determined before rational treatment can be planned. Recent researches . . . have made it possible for a physician to plan a treatment program on a firm, scientific basis, rather than on tradition."

FUNCTIONAL UTERINE BLEEDING: A good short article by Moore, Singh and Holzman, in California Medicine, November, 1954. A practical scheme of management is suggested, including uterine curettage, diet and general measures, cyclic steroid hormone therapy, androgen therapy, hysterectomy, radiation castration.

ESOPHAGUS. Diseases and Lesions of the esophagus are presented in two articles in Medical Annals of the District of Columbia, for November, 1954. Michael K. Kurilla writes on Congenital Anomalies of the Esophagus, and George W. Ware on Peptic Esophagitis and Peptic Ulcer of the Esophagus. Both articles are well worth careful reading.

CHRONIC BRONCHITIS: A somewhat timely article by Phillips and Associates of Providence, R.I., in Diseases of the Chest, November, 1954. Points in the summary include: The majority of adult males with chronic cough did not have tumor, tuberculosis, bronchial asthma, bronchiectasis or chronic pneumonitis — but chronic bronchitis. Inhalation of cigarette smoke was the most common cause of chronic cough. Chronic bronchitis is the commonest cause of pulmonary emphysema.

ANTIBIOTICS: The most common term in medicine today. Among the several good articles on this subject, the following are interesting and well worth perusing: Clinical Use (of Antibiotics) in Management of Infections. Ivan L. Bennett, Jr., Conn. State Medical Journal; the three important considerations in the choice of antibiotics are the type of infection, the etiologic agent, and certain characteristics of the individual drugs.

Antibiotic Therapy, by Jesse W. Hofer, Texas State Journ. of Med., October, 1954.

Penicillin Reactions, by Strauch, Byrd and Eng. Ibid.

Combined Drug Therapy in Upper Respiratory Infection, McLane and Heck, The Journ. of the Med. Soc. of N. J., October, 1954.

Prevention of Penicillin Reactions, Eugene J. Luippold. Ibid.

Oran Penicillin - Antihistamine Combination. Janet L. Eckhardt, The Journ. of the Med. Soc. of N. J., November, 1954.

Cortisone in Ulcerative Colitis. S. C. Truelove and L. J. Witts, British Med. Journ., Aug .14, 1954.

Some Observations on the Treatment of Ulcerative Colitis with ACTH, Dick and Beckett, British Med. Jour., Aug. 14, 1954.

THE ARTHRITIDES IN INDUSTRY: Roy R. Schubert, The Journ. of Med. Soc. of N.J., October, 1954. The relation between trauma and an arthritis developing subsequently is one of the most bothersome question which compensation boards have to deal with. This article does not solve the problems involved, but discusses them very sympathetically.

CORONARY ARTERY DISEASE - Surgery for: Crecca and Associates have a very interesting article on this subject in The Journ. of the Med. Soc. of N.J. for November, 1954. "Deaths from coronary disease continue to rise. Medical treatment has obviously failed to stem the rising tide of coronary deaths. The authors believe that surgical revascularization of the heart is the answer. They review the various surgical technics and recommend procedures." This ought to interest all of us, because any one of us may be heading into a coronary artery catastrophe.

Woman's AUXILIARY

CIVIL DEFENSE — STATE OF ARIZONA

ARIZONA, in spite of the protection afforded by its geographical location and sparseness of population, houses two cities, Phoenix and Tucson, which are recognized in Civil Defense as National Target Areas. Phoenix receives this classification by virtue of being the state capital, Tucson because of its strategic air base and several large defense industries.

Through progress in Civil Defense must move slowly, much has been accomplished in the state within the past year. "Connelrad", a national public alert system by means of radio, has been set up throughout the state, tested, and proved efficient. "Comillum", a nationwide light pattern system, is in the process of being organized. It will replace the blackout of World War II. The extraordinarily bright lights of the city will be dimmed, while the dimly lit areas will be brightened causing an all over glow confusing to enemy planes.

Casualty clearing stations have been planned in Pima County. Such centers are organized in schools, churches, and clubs, chosen for the most favorable distribution throughout the city and the facilities offered for emergency First Aid Stations. Personnel manning these are Doctors, Nurses, Dentists, Litter Bearers, and persons trained in First Aid.

In many districts of Pima County Warden Posts have been assigned and manned. Ten rescue instructors have been trained along with two radiological teams. The Air Force plans to have an Air Observer Corps underway by this summer.

In Maricopa County Civil Defense training has been started in the schools and Civil Defense drills are in effect there. A mass feeding program in Cochise County has been instituted and trial runs made. Through Cochise County runs Arizona's main evacuation highway, thus explaining the need for such a feeding program.

To accomplish our objectives for 1955-56 Civil Defense is in urgent need of volunteers, both lay and professional. This is a day when the doctor and lawyer, housewife and secretary, mason and farmer must all band together for the protection and preservation of our way of life.

Leila S. Shallenberger
Tucson, Arizona

PUBLIC RELATIONS

IN recent years, the medical societies all over the country have become aware that not only must the doctor render good medical service; he must also practice good public relations. Recognizing the fact that creating friendship and understanding is vital to the preservation of our present medical care system, the committee on PR of the Woman's Auxiliary to the American Medical Association, chaired by Mrs. Richard R. Reynolds has established a program to complement and supplement that of the A.M.A. Following is an outline of purpose of this program to aid county auxiliaries:

1. To develop grass roots public relations whereby every Auxiliary member will feel a personal responsibility to assist in creating better public relations
2. To make every member aware of her responsibility to the community through service.
3. To acquaint the public with the activities, purposes, aims, and accomplishments of the Medical Association and its Auxiliaries
4. To create an awareness of the health services available in each community
5. To help mold public opinion for the improvement of the health of the people in the truly American democratic way

In order to realize the foregoing, it is suggested that we know our community needs. A survey should be made to establish these needs as well as to show what has already been accomplished. We should seek to: improve conditions which need improvement; acquaint the community with what we are trying to do; and gain community cooperation. Likewise, we must establish wholesome cooperative relationships with other agencies serving the community by accepting responsibility on health committees when asked by organizations to which we belong and by taking an active part in civic affairs.

There are many ways in which we may serve our community both as individuals and as auxiliary members. Many clubs are active in the field of health and health education and we should support them. Too, we can do much by supporting the committees within our own auxiliaries. **Today's Health** is an excellent PR tool, and we can assist in having it placed in libraries, schools, beauty shops, and in the hands of parents. We must help increase loan funds and establish scholarships for **Nurse Recruitment.** This is a wonderful opportunity to educate the public in the need for more nurses. The **American Medical Education Foundation** needs our contributions. Each and every Auxiliary member should assist the **Civil Defense Committee** by participating in some Civil Defense activity. We must cooperate with the **Legislative Committee** in supporting or opposing pending legislation.

There are many more ways in which we can work with our Medical Society — i.e., planning Health Fairs, Health Days and Health Forums to acquaint the community with available health resources ready to serve them. Remember: PR is not publicity; it is doing the right thing and communicating the fact to the community.

Mrs. John A. Eisenbeiss, Chm.
Committee on Public Relations
Ariz. State Medical Auxiliary

ADVISORY COMMITTEE

The annual meeting of the Advisory Committee of the SJAB, held in Miami, was the last session at which Dr. Stanley B. Weld will preside as chairman. Because of his years of service in behalf of the State Journal Group, the members of the Advisory Committee, by unanimous vote, passed a Resolution of Commendation for Dr. Weld. His present term of office which expires on December 31, 1954, brings to a close a 12-year period as a member of the Advisory Committee. For the past 10 years, Dr. Weld has been the able Chairman of our Committee. In his post as Editor-in-Chief of the CONNECTICUT STATE MEDICAL JOURNAL, he will continue his support of the bureau program.

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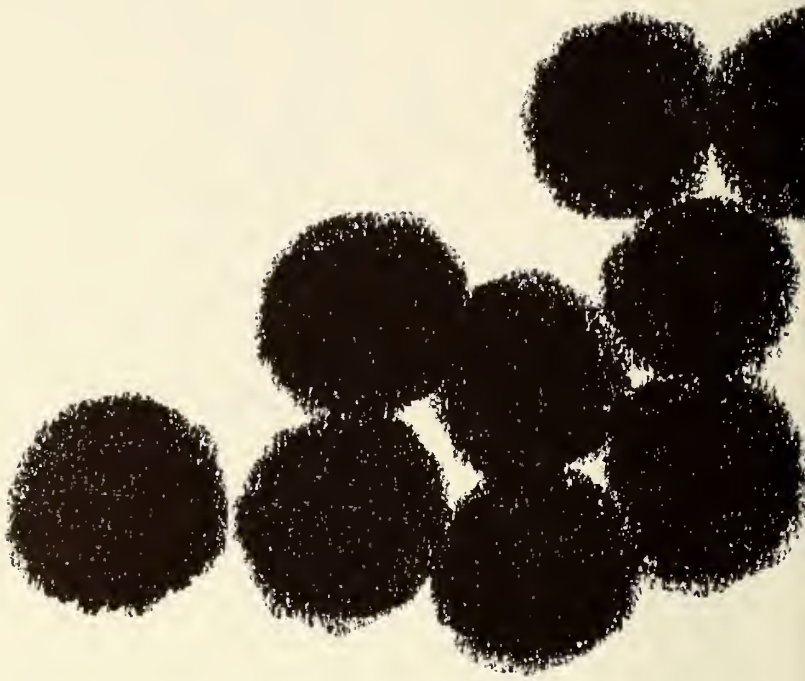
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ARIZONA MEDICINE
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Original ARTICLES

TEMPORARY COLLAPSE PROCEDURES IN THE TREATMENT OF PULMONARY TUBERCULOSIS: PRESENT-DAY STATUS

Bertram L. Snyder, M.D., F.A.C.P.*
Phoenix, Arizona

THERE has been in the last five years considerable discussion as to the merits of time-honored methods of treatment in pulmonary tuberculosis. Let us for a moment review briefly the more common procedures in order of their frequency of use up until recent years.

1. Intrapleural pneumothorax — 1920
2. Phreniclasis — Crushing of phrenic nerve
3. Phrenico-exeresis — Removal of phrenic nerve
4. Pneumoperitoneum — 1931

Let us analyze these well-known procedures as has been done by Hudson and Howes(1) with additions by this author. A comparison of yesterday's indications for pneumothorax and today's:

Yesterday

(1) Extensive progressive disease of one lung
(2) Ulcerative tuberculosis in the upper 1/3 or ½ of one lung and quiescent or arrested foci in the contralateral lung
(3) Certain acute exudative lesions
(4) Cavities, thin or thick walled
(5) Moderately advanced disease not showing improvement under routine sanatorium care
(6) To control hemoptysis
(7) To replace aspirated fluid
(8) Age preferably not over 45 years

Today

(1) Moderately advanced or extensive progressive disease with cavities (not over two cm. in diameter) usually isolated in the upper or middle lobe
(2) Control of hemoptysis
(3) To control disease on one side so that a more extensive surgical procedure can be performed on the contralateral lung
(4) Most always accompanied by antimicrobial therapy
(5) Usage rapidly decreasing

In John Alexander's well-known book "The Collapse Therapy of Pulmonary Tuberculosis", published in 1937, Forlanini(2) is credited with this statement: "Pneumothorax is indicated whenever life is threatened by the extension of a local lesion." Forlanini's terse and simple sentence suggests the principles upon which indications for pneumothorax were founded. In other days, pneumothorax was a means of aiding the closure of cavities and because there were no other methods available at the time to control the patients' pulmonary disease, many cases of pneumothorax were initiated and continued, even though the collapse was unsatisfactory. This naturally led to certain complications, such as empyema and bronchopleural fistula. The advent of antimicrobial drugs in the last five years has altered greatly the use and indication for therapeutic pneumothorax to the point that today many of our institutions have completely abandoned this type of procedure.

Let us now review in the same way the indications for a diaphragmatic paralysis. This measure formerly was used quite often in the treatment of pulmonary tuberculosis, either inde-

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pendently or to supplement other collapse procedures.

Yesterday (usually permanent)

(1) Primary procedure in exudative or productive lesions
(2) Apical or mid-lung or basal lesion with or without cavity
(3) To reduce size of pleural space during reexpansion of lung
(4) Preliminary to thoracoplasty
(5) Aid in rest for the lungs in patients starting exercise

Today (usually temporary)

(1) Exudative or mixed types of lesions limited to apex to preferably above first rib
(2) Reduce the size of hemithorax during reexpansion of lung
(3) Protective rest to cases starting exercise
(4) To aid in control of effusion
(5) As an adjunct with pneumoperitoneum to prevent over-distention of the remaining lung tissue following a segmental resection or lobectomy
(6) In certain sections of the country procedure has been abandoned

In the early years paralysis of the diaphragm was usually permanent. This was accomplished either by phrenicotomy or phrenic exeresis. Additional procedures were frequently required to complete control of the disease. It was found that under certain circumstances such as a contralateral thoracoplasty, a permanent paralysis of the diaphragm became a liability rather than an asset. This led to a change from the permanent type of paralysis to a temporary.

Again we find that the impact of antimicrobial therapy has reduced the indication for another very common procedure.

We come now to the most frequently used procedure, particularly in the past five years, i.e., therapeutic pneumoperitoneum. The periodic installation of air into the peritoneal cavity was first proposed as a means of treating tuberculous peritonitis and intestinal tuberculosis. Later it was used in the treatment of uncontrolable hemoptysis in patients in whom it was difficult to determine the site of the bleeding or in whom the induction of pneumothorax was prevented by pleural adhesions. Still later, the procedure was used to augment the rise of the diaphragm following phrenic nerve interruption or where thoracoplasty was contra-indicated or refused by the patient. If the combination of diaphragmatic paralysis and pneumoperitoneum is applied in patients with minimal or moderately advanced disease, in preference to pneumothorax, the results are likely to be good in many instances. After a trial with therapeutic pneumoperitoneum and particularly after the advent of antimicrobial therapy, it was found and thought by many that this form of temporary collapse procedure had very definite merit. It was felt that with general relaxation of the lung tissue healing was effected more rapidly, that the results were more permanent, and that patients could be gotten ambulatory in a shorter period of time. In many instances it was possible to discharge patients at an earlier date, feeling that the possibility of reactivation would be much less. In the light of present knowledge, most of these patients, if not all, continue on long-term antimicrobial therapy.

Yesterday

(1) Pneumoperitoneum not generally considered until the year 1931
(2) More generally used prior to use of antimicrobial therapy

Today

(1) Pulmonary tuberculosis in which unilateral or bilateral pneumothorax would be indicated but not feasible because of adhesions
(2) Exudative tuberculosis with or without cavities — definitive with antimicrobial therapy
(3) As a preliminary procedure to the above to be followed by resection of the residual lesion
(4) Pulmonary hemorrhage
(5) With or without diaphragmatic paralysis to prevent over-distention of remaining lung tissue following segmental resection or lobectomy
(6) Not very satisfactory over age 60

Pneumoperitoneum's great value lies in the fact that relaxation of both lungs can be obtained with one procedure. Basilar lesions which do not respond favorably, as a rule to pneumothorax or thoracoplasty are frequently greatly benefited. The danger of pleural effusion is avoided. Finally, even spical cavities are influenced by pneumoperitoneum. Fixation of the diaphragm by pleural adhesions interfere with its effectiveness. The procedure is readily reversible and affords a means of testing patients

who may be unsuitable for treatment by an irreversible procedure.

There are various sections of the country where even pneumoperitoneum treatment has been abandoned in favor of definitive resectional surgery under the "protective umbrella" of antimicrobial drugs.

To many patients who have refused definite resection surgery, pneumoperitoneum offers some element of control until such time as the patient can be convinced that resection is necessary. In my opinion this approach to the patient is of distinct value, especially in private practice, as patients are not always willing to accept a more extensive surgical procedure.

In conclusion, as so often happens in medicine, once a time-honored method of treatment is found to contain flaws, the pendulum is apt to swing to the other extreme. This appears to be the case with some currently expressed views on temporary collapse procedures, particularly since the advent of antimicrobial therapy. There comes a time in the course of treatment of pulmonary tuberculosis in an individual when the judicious application of one of these temporary collapse procedures at the appropriate time may well spell the difference between a atient who has cured his disease or has become a respiratory cripple.

In these days of mass x-ray surveys, the general practitioner plays an increasingly greater part in discovery and early management of tuberculosis. The general practioner and those with special interest in this field must cooperate to plan a program of therapy providing as far as possible ways and means of conquering this very important individual and public health problem.

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15 E. Monroe Street

ANNUAL MEETING

ARIZONA MEDICAL ASSOCIATION INC.

MAY 4, 5, 6, 7, 1955

HEADQUARTERS

El Conquistador Hotel

TUCSON, ARIZONA

TWO NEW COCCIDIOIDAL FUNGICIDES

1. Oil of Sassafras.
2. Sodium Salt of Cinnamic Acid.

Robert Cohen, M.D.*
Bakersfield, California

THE search for effective coccidioidal fungicidal drugs is fascinating in that surprises crop up when least anticipated.

This in vitro study of the oil of sassafras was inspired by Seegal and Holden's (1) experience with the extract of buttercup which was also a coccidioidal fungicide, but found too toxic clinically by Conan and Hyman (2). It was hoped that this drug which is being used sparsely today might be revived as a specific for coccidioides infections.

The in vitro study of the sodium salt of cinnamic acid for coccidioides came about from seeing the scientific exhibit at the American Medical Association in 1954 in San Francisco, California. The booth by the University of Michigan group in Antifungal Activity of the Stilbenes, Nitrostyrenes, and related Compounds (3) showed that the sodium salt of cinamic acid in vitro inhibited Blastomycosis. No coccidioidal study has been made thus, this study.

1.00 cc. of oil of sassafras was dissolved in 99 cc. of propylene glycol and used as the stock solution. Various dilutions in Sabouraud's media were made. The plates and controls were inoculated with heavy loopfulls of pus containing the spherules of coccidioides immitis. The inoculum was obtained from the sinuses of a gravely ill coccidioidal patient. All petri dishes were sealed with scotch tape and incubated at room temperature.

The controls grew profusely as anticipated. The oil of sassafras completely inhibited coccioides at a dilution of 500 micrograms per milliliter. The plates were observed for three weeks.

5.00 grains of the sodium salt of cinnamic acid were dissolved in 5.00 cc of boiling water and used as the stock solution.

Various dilutions in Sabouraud's media were made with the stock solution. The plates were inoculated in the same manner as previously described. The culture plates were examined daily after the fourth day. The controls grew profusely. Complete inhibition of coccidioides was observed at a dilution of 30 micrograms per milliliter.

The chemical and physical and therapeutic properties of the oil of sassafrass and cinnamic acid are in the 22nd Edition of the Dispensatory of the United States of America.

Sassafras tea has been widely used as a stimulant, diaphoretic. It has a phenol coefficient of 2. I am using it on 10 cases of primary coccidoides and a few disseminated cases. No harm can come from its use and perhaps some good may result. The complement fixation test should be used to evaluate its response.

Cinnamic acid was used as a liver function test in 127 cases by Saltzman and Caraway (4). It is a non toxic drug and can be given orally and intravenously. I am evaluating it clinically now, and will report its results in a later paper.

SUMMARY

Two new fungicides for coccioides immitis are reported. Oil of sassafras completely inhibits this fungus at 500 micrograms per milliliter. The sodium salt of cinnamic acid completely inhibits coccidioides at 30 micrograms per milliliter.

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GASTRIC RESECTIONS — ST. JOSEPH'S HOSPITAL 1940-1952

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RECENT advances in medical and surgical practice have drastically reduced the mortality and morbidity rates associated with surgery of the gastrointestinal tract. The use of antibiotics, better understanding of fluid balance and chemistry, better pre-and post-operative care, early ambulation, improved anaesthesia, have all been responsible for this improvement. Such reduction is especially true of the operation of gastrectomy. A. A. Berg(4) insisted as early as 1930 that gastric resection produced better results than gastro-enterostomy. Because of the high mortality rate then associated with gastric resection and the magnitude of the operation, acceptance of Berg's theory was slow. By 1940 the trend throughout the country favored gastric resection. Today the accepted surgical treatment for peptic ulcer disease is gastric resection. In better clinics throughout the country the mortality rate has been reduced to one to two per cent.

It is my purpose in presenting this paper to review all the gastrectomies performed at the old St. Joseph's Hospital from 1940 through 1952. St. Joseph's is a typical private hospital in a large sized community, staffed by competent average or above average surgeons. Our records, then, should be comparable with like records from similar hospitals throughout the country.

GENERAL DATA:

From Jan. 1st, 1940 to Dec. 31st, 1952, 194 patients underwent subtotal gastric resections for various pathological lesions. These 194 cases taken from the surgical records of St. Joseph's Hospital constitute the clinical material used for this study.

Twenty surgical staff members performed these 194 cases. Of these twenty surgeons operating, one had 41, another 30, then 20, 19, 17, 11 and 7. Five surgeons performed three to five gastrectomies, the remaining nine had either one or two.

Of the 194 cases there were 154 men (78.03 per cent) and 40 women (21.97 per cent). This distribution and percentage corresponds almost exactly with those of Glenn-Harrison(11). The patient's ages ranged from 27 (four cases, all with duodenal ulcer) to 70 (peptic ulcer with pain and vomiting). Almost two-thirds of the cases were in the 40 to 60 group.

TABLE I

Ages by Decades

20-30	30-40	40-50	50-60	60-70	70-80
5	34	50	69	21	5

Number of cases per year. It is interesting to note the marked increase in the number of gastrectomies as the years progressed. During the last three years of this study 163 were done as compared to 11 for the first three years.

TABLE II

Number of Cases Per Year

Year	No. Cases	No. Deaths
1940	2	0
1941	2	1
1942	7	0
1943	5	2
1944	7	0
1945	5	1
1946	8	2
1947	21	2
1948	11	2
1949	13	1
1950	38	2
1951	47	4
1952	28	1
	194	18

Symptoms: The symptoms presented by this group of 194 cases are shown in Table III. They are indicative of the high incidence of complications of ulcer which led to surgery as the choice of treatment. Usually pain was the first symptom, occurring in 110 cases (56.9 per cent) followed by nausea and vomiting. Other manifestations of ulcer, such as hemorrhage, obstruction, and weight loss often appeared as these sypmtoms became intensified. The symptoms presented by this group correspond exactly with those reported throughout the country and with those given in all text books. The average duration of symptoms before use of surgery was 7.3 years.

Previous Operations: Twenty-five (12.8 per cent) of these patients had previously had oper-

° From the Surgical Records, St. Joseph's Hospital, Phoenix, Arizona. Presented at Regular Staff Meeting, Nov. 9, 1953.

ations for the symptoms or complications of ulcer.

TABLE III
Symptoms

Pain	110
Nausea and vomiting	28
Hemorrhage (Hematemesis and (or) melena)	30
Obstruction	10
Dyspepsia	8
Wt. Loss	8
	194

TABLE VI
Previous Operations

Perforations	13
Gastro-enterostomy	7
Cholecystectomy (without relief)	3
Gastro-enterostomy & Vagotomy	2

Indications and pre-operative diagnosis: The indications for operation for this group of patients follow almost to the letter, with only a few marked exceptions, the classical text book picture and recommendations by the leading surgical clinics of this country. Practically all of these cases had been well worked up and had had long and adequate medical treatment. The pre-operative diagnosis closely corresponded to the pathological distribution of the lesions as reported by the pathologist. There were fourteen pre-operative diagnoses of adenocarcinoma, fifteen were found by the pathologist.

TABLE V
Pre-Operative Diagnosis

	No. Cases	Men	Women
Duodenal ulcer	112	90	22
Gastric ulcer	60	48	12
Adeno carcinoma	14	11	3
Pyloric & Duodenal ulcer	2	0	2
Marginal ulcer	3	3	0
Gastro jejuno colic fistula	2	2	0
Chronic gastritis	1	0	1
	194	154	40

Pathological Distribution of Lesions: The pathological distribution of lesions, as stated before, follows very closely the pre-operative diagnosis with one exception. The large number of cases of chronic gastritis as reported by the pathologist was from the duodenal ulcer group. Because of the difficulties encountered and danger ensuing, no attempt was made to remove the ulcer, the stump being plicated.

TABLE IV
Pathological Distribution of Lesions

Chronic gastritis	86
Duodenal ulcer	24
Gastric ulcer	60
Adeno carcinoma	15
Gastric and duodenal ulcer	4
Marginal ulcer	3
Gastro jejuno colic fistula	2
	194

Post Operative Deaths: There were eighteen deaths following gastric resection in these 194 cases, a mortality rate of 9.03 per cent. Four of these were in patients under 50, and two under 40; the youngest was a female, age 33, who expired on the eighth post-operative day of generalized peritonitis. There were four deaths of patients over 60, the three eldest being 67. Of these 18 deaths, 15 were male (83 per cent) and three female. The shortest post-operative time was six days (bilateral hydro thorax and pulmonary edema) and the longest 53 days. The latter case was a male, age 40, with biliary peritonitis resulting from a severed common duct as shown by autopsy.

In a very careful re-review of these cases after finding this extremely high mortality rate, I have classified these fatal complications as (1)Unavoidable, 10 (5.01 per cent) and (2) technical failure or surgical accident, 8 (4.02 per cent). Three of the 10 unavoidable cases were those in which a pathological diagnosis of diffuse adeno carcinoma was made.

During the last three years of this study 163 gastrectomies were performed with eight fatal complications. Of these eight cases one (0.6 per cent) was unavoidable (acute pancreatitis) and seven (4.2 per cent) were due to technical failure. The mortality rate for the technical failures is somewhat high is still comparable with other reports studied.

TABLE VII
Post-Operative Deaths

Year	Age	Sex	PO Day of Death	Cause of Death
1941	56	M	8	Coronary Thrombosis
1942	56	F	19	Pulmonary embolism
1942	52	F	17	Coronary thrombosis
1945	40	M	12	Coronary thrombosis
1946	44	M	20	Pneumonia-Acute Hepatitis
1946	67	M	13	Pneumonia
1947	53	M	6	Bil. Hydro thorax - Pulmonary
1947	55	M	27	Peritonitis-Duod. stump leak

1948	53	M	8	Lower nephron nephrosis
1948	53	F	14	Peritonitis-Duod. stump leak
1949	63	M	14	Coronary thrombosis
1950	59	M	13	Peritonitis-Duod. stump leak
1950	57	M	5	Peritonitis-Duod. stump leak
1951	63	M	19	Biliary Peritonitis
1951	40	M	53	Biliary Peritonitis - common duct cut
1951	57	M	7	Peritonitis-leak. duod. stump
1951	67	M	14	Peritonitis, blown out suture line, anastomosis
1952	67	M	8	Acute pancreatitis

It is interesting to note that the first death resulting from technical failure did not occur until 1947 and was the 47th case studied. There were seven deaths prior to this one, but all were due to either pulmonary or cardiac complications. Early ambulation of gastrectomy patients was started about this time, and in my mind is very definitely the leading factor in the reduction of deaths from pulmonary, cardiac, and embolic complications.

Six of the eight fatalities due to technical failure resulted from peritonitis caused by leakage of the duodenal stump. This is the most feared, and justly so, complication of gastrectomy. It has been proven that the action of the pancreatic and biliary juices may in many instances cause a disintegration of the absorbable sutures and result in a leakage of the stump. The use of interrupted nonabsorbable sutures such as cotton or silk has almost wholly eliminated this hazard. As will be noted from Table VII there were no deaths from technical failure during 1952, a very commendable record. The one death reported in 1952 was proved at autopsy to be from acute pancreatitis. This patient had a large penetrating peptic ulcer. Stones were also found in the gall bladder, but the surgeon decided that the removal of the gall bladder was not justified at the time of the gastrectomy. Jaundice developed on the 4th post-operative day, and at surgical exploration a stone was found to be lodged in the common duct. If multiple surgery had been performed on this patient, it is possible that the mortality rate in 1952 would have been zero.

Post-operative complications and morbidity rate: The average length of hospitalization for these 194 cases during the 12 year period was 18.02 days. For the first seven year period the average length was 24.5 days; for the last 5 years, 15.4 days. The most serious complications with recovery are listed in Table VIII. These complications had much to do with increasing the average hospital stay. The patient with the severed common duct was hospitalized 53 days.

TABLE VIII

Serious Complications With Recovery	
Severed common duct	1
Intestinal Obstruction	3
Leakage duodenal stump	2
Wound disruption	3

DISCUSSION

A review of 194 gastrectomies performed at St. Joseph's Hospital (old) for the 12 year period, 1940 through 1952 is presented. The incidence of fatal complications following gastrectomy was 9.03 per cent of which I feel 5.01 per cent was unavoidable and 4.02 per cent was due to technical failure. With the improvement in pre- and post-operative care, the marked improvement in surgical technique, the use of antibiotics, the better understanding of fluid balance, early ambulation and improved anaesthesia, the mortality rate for subtotal gastric resection should remain low and make this procedure the accepted treatment for those cases in need of surgery.

When we consider the fact that 20 surgeons performed these 194 operations, I think we can say that our over-all results are commendable. In all the papers reviewed, the series reported were by one man or a very small group of men so the results attained should be necessarily better. I would welcome a comparison of our records with those of other private hospitals. I am confident we would not suffer by such comparison.

The sex and ages of patients, the indications for surgery, the pre-operative diagnosis, the pathological distribution of lesions, the symptoms and incidence of complications correspond to those reported throughout the country.

The majority of the cases reviewed were well worked up and showed that all had adequate medical treatment before being subjected to surgery. This was especially true of those cases in which a diagnosis of duodenal ulcer was established.

The average length of hospitalization has been lowered considerably during the years from 1940 through 1952, and probably this trend will continue as the years progress. I am confident that improved surgical technique and

early ambulation account for this reduction of morbidity more than any other factor.

There were no cases reported in this series of surgery for massive or severe upper gastrointestinal hemorrhage of unknown etiology. Such surgery was advocated by Waggenstein in 1945 and more recently by Cooper and Ferguson (10). They outlined the following principles for selection of patients for performing blind gastric resection. (1) The patient must have massive upper adbdominal gastro-intestinal hemorrhage. The term massive implies a rapid rate of blood loss. (2) The usual causes of hemorrhage that do not require surgical treatment must be ruled out. Proper hematological studies to eliminate the blood dyscrasies can be accomplished quickly. Zamcheck and his associates have shown the value of the simple bromothalein sodium retention test in such an emergency; a negative result indicates that hepatic disease of sufficient severity to cause portal hypertension is not present. (3) A trial of conservative management is initiated immediately in the belief that the great majority will respond without operation.

If the above requirements are satisfied, subtotal gastrectomy is carried out on the following patients. (1) Any patient in which bleeding has not stopped in 48 hours. This 48 hour period is outside limit in most instances but is often shortened. (2) Any patient whose hemorrhage is controlled on a medical regimen and who while hospitalized experiences recurrent bleeding is operated upon without delay. (3) The patient seen occasionally with a rapidly exsanguinating hemorrhage is operated upon without a conservative trial. It is felt that hemorrhage in such a patient must originate from a major artery and that procrastination with treatment by anything but direct surgical attacks on the bleeding point, is hazardous. It will be interesting to note how many of these cases of surgery will be performed in the future at this hospital.

The most popular technique employed in this series, with about equal frequency, was the Polya and Hoffmeister. During the last two years, the Schoemaker-Billroth I operation was used with more frequency. This is a simpler, safer, more physiologic operation and can be accomplished more rapidly than the Polya, Hoffmeister proccdure.

It is felt that the only data lacking in this review is the follow up results of these gastrectomies. Of course a follow up of so many private patients under the care of so many surgeons is impossible.

SUMMARY

1. A review of 194 gastrectomies from the surgical records of St. Joseph's Hospital (old) 1940 through 1952 has been presented.

2. The over-all mortality rate was 9.03 per cent, 5.01 per cent unavoidable, 4.02 per cent due to technical failure. The mortality rate for the last three years (163 cases) was 4.9 per cent.

3. Twenty surgeons performed these 194 gastrectomies.

4. Subtotal gastrectomy was performed in all cases except one.

5. The pre-operative diagnosis and the pathological distribution of lesions correspond very closely.

6. A steady improvement in mortality rate, post-operative complications, and length of hospitalization is shown.

7. Gastrectomy for massive upper gastro-intestinal hemorrhage is advocated.

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PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL CASE 38412

AN eighty-six-year-old Negress was admitted to the hospital because of pain in the right lower quadrant.

Five days prior to admission the patient had the onset of crampy right-lower-quadrant pain, which increased in severity over the next twenty-four hours and was temporarily relieved by some "white pills" prescribed by her physician. However, the pain recurred, was nonradiating, steady, continuous and sharp and varied somewhat in intensity, but on the whole was quite severe; it was least severe when she lay quietly in bed on her back, and was aggravated by lying on either side and by movement. Anorexia had been present since the onset, and her diet had consisted of coffee and toast. There had been no chills, fever, urinary frequency, dysuria, diarrhea or melena. She had continued to take milk of magnesia daily as had been her custom for years, and had had a daily bowel movement, the last of which occurred the day prior to entry. She had not been nauseated, but on the morning of admission she vomited a small amount of bitter material; since she was blind she was unable to describe the vomitus. The vomiting was accompanied by rather severe crampy abdominal pain.

She had had a hysterectomy for fibroids of the uterus forty years before admission. For two years she had been under the care of her physician because of hypertension; six days prior to the onset of the pain he allegedly had felt a mass in the right side of the abdomen. Her general health had always been good; prior to the onset of pain she had had a good appetite. There had been no previous similar attacks and no gastrointestinal or urinary complaints. There was no known weight loss.

Physical examination revealed a well preserved woman in no acute distress. The lungs were emphysematous. There was a Grade II, blowing, apical systolic murmur. There was an area in the right lower quadrant of the abdomen of increased resistance to palpation and deep in this area of resistance was a smooth, firm, tender mass, which appeared to fill the whole right iliac fossa. There was both direct and rebound tenderness referred to this area. Peristalsis was present. The liver, spleen and kidneys could not be felt. Pelvic and rectal examinations confirmed the tenderness and feeling of fullness in the right lower quadrant.

The temperature was 102°F., the pulse 110, and the respirations 18. The blood pressure was 140 systolic, 95 diastolic.

Examination of the blood revealed a hemoglobin of 12.5 gm. and a white-cell count of 15,400. The urine was normal. A stool gave a negative guaiac reaction. A roentogenogram of the chest demonstrated elevation of the left leaf of the diaphagm, enlargement of the heart, a tortuous calcified aorta and linear areas of density in both lower lung fields. An abdominal film showed an area of haziness in the right middle portion of the abdomen and numerous loops of dilated small bowel in the left side of the abdomen. Barium-enema examination disclosed multiple diverticula in the descending colon and sigmoid. The cecum was not completely filled, but there was a suggestion of an extrinsic pressure defect on its medial aspect. In the intravenous pyelogram the function and structure of the kidneys and urinary tract were normal; the density in the right lower quadrant, with a suggestion of impingement upon the gas shadow of the cecum, and the multiple dilated loops of small intestine in the left side of the abdomen and pelvis were again noted.

A Harris tube was passed down to the lower ileum, and the patient was given antibiotics and fluid therapy intravenously. There was some decrease in the abdominal pain. The temperature varied between 99.8 and 101°F. The white-cell count was 8000 second day and 9500 on the fourth day. On the fourth day an operation was performed.

Leslie R. Kober, M.D.

This 86 year old negress with pain and a mass in the right lower quadrant of the abdomen presents an interesting diagnostic problem, chiefly because of her age. In a younger person the first thought would be appendicitis and abscess, and all the usual differential diagnostic problems would be routinely considered; acute salpingitis, chronic salpingooophoritis, acute or chronic diverticulitis, acute pyelitis or perinephric abscess in a low lying kidney, ovarian cyst, Psoas abscess and perforated Meckel's diverticulum just to mention some of the possibilities.

In an older person, of course, most of the same possibilities may be present, also abdominal aneurysm, and mesenteric thrombosis must be considered in the older age group, as well as various types of tumors, ovarian or otherwise.

We are told she had a hysterectomy 40 years previously for fibroids and we can presume that one or both ovaries were left behind, also probably the appendix.

There is some indication of bowel obstruction from the dilated loops of small bowel in the left abdomen. The urinary tract seems to be uninvolved according to the pyelogram.

The brief duration (5 days) of her crampy right lower quadrant pain which was aggravated by movement, with both direct and rebound tenderness, temperature up to 102°F. and pulse 110 with moderate leucocytosis (15,400) all indicate an inflammatory mass.

However, she had been under the care of a physician for hypertension during the previous two years and he had felt a mass in the right side of the abdomen six days before the onset of pain. Such a history would not seem to be in keeping with a primarily inflammatory lesion. It appears that a mass developed and then became infected. However, in older individuals their reaction to infection is usually slower to develop than in younger persons. Early gangrene is relatively frequent. Serious inflammatory complications may be accompanied by surprisingly slight fever, but an increased pulse-rate may assume much the same diagnostic significance as high fever in the younger individual. Vomiting, too, is less frequent in the aged, but anorexia and nausea are more constant. It is not rare for aged patients to delay a week before seeking medical aid. Locallized peritonitis may develop in the right iliac fossa, in the aged, with surprisingly few constitutional symptoms, and this local inflammatory mass may gradually become so firm and nodular as to suggest malignancy. In such abscesses immobility of the cecum, together with a cecal filling defect on x-ray examination, may still further simulate a neoplasm.

An ovarian cyst which became infected, either by torsion and shutting off its blood supply, or through gradual bacterial infection might also seem to fit the clinical picture. However, the location, the apparent partial small bowel obstruction and age of the patient are against such a diagnosis.

An aneurysm or a hematoma may produce a right abdominal mass and then become infected, or through pressure produce painful symptoms.

The x-ray examination revealed diverticula in the left colon and certainly one might have been present in the cecum and have developed an abscess, but the barium enema seemed to indicate an extrinsic mass on the medial aspect of the cecum, and this is not like a diverticulitis.

It is dangerous to make a positive diagnosis on the x-ray finding of an incompletely filled cecum, but on repeating the studies at time of the pyelogram we are again told that the mass suggested "impingement upon the gas shadow of the cecum, and the multiple dilated loops of small intestine in the left side of the abdomen were again noted".

With tube into lower ileum and antibiotics the patient improved, the leucocytosis reduced, but the temperature spiked to 101°F. The presence of an infected mass — apparently abscess seems fairly certain. It was described on palpation as smooth, firm, tender, appearing to fill the whole right iliac fossa.

In the February 1953 issue of Geriatrics a negro physician writing on "Geriatric Experiences with the Negro Aged" stated that "On the basis of a study of an active negro population between the ages of 55 and 91, the diseases encountered most frequently are cardio-vascular disease with or without hypertension and arteriosclerosis.

"The complication in this group, in order of occurrence, are cerebral hemorrhage, coronary arteriosclerosis, arteriosclerotic leg ulcer, arteriosclerotic gangrene and arterial thrombosis." He goes on to say that:

"The entity of arterial thrombosis appears to be more prevalent in the negro than in the

white. When there is pathology in the valves of the heart these thrombi may be embolic in origin rather than incidental to the injured intima of arteriosclerotic vessels."

From another recent duscussion, I quote the following:

"**Mesenteric vascular occlusion** is fortunately a very rare disease. At the Massachusetts General Hospital there were 13 cases in approximately 48,000 surgical admissions. The accident may occur at any age, but it is seen most commonly in older people. In most cases there is some disease in the circulatory system such as endocarditis, arteriosclerosis, aneurism, phlebitis, or infection in the abdomen.

"The diagnosis is often difficult, and all the physician can be sure of is that something very serious has happened in the abdomen, something that has to be attended to surgically and immediately if the life of the patient is to be saved. In attempting to make the diagnosis the physician will think of perforation of an ulcer, acute pancreatitis, volvulus of the bowel, an intussusception, or some other form of intestinal obstruction. Mesenteric embolism or thrombosis will be thought of particularly if the patient is suffering with valvular heart disease or sepsis, or if there are signs of embolism elsewhere, or if the patient is old and markedly arteriosclerotic."

Three other articles of interest might briefly be mentioned here are:

The reported finding of **carcinoma** of the cecum in elderly individuals in which acute appendicitis was the presenting symptom as reported by Dr. John F. Thomas in **Texas State Journal of Medicine** — (1953).

Also in a paper entitled "Intussusception in the Aged", George C. Coe, and associates reported in **Gastro-Enterology** (1952), "that this condition (intussusception) must be considered in the differential diagnosis of acute bowel conditions in the aged. Usually symptoms are those of a progressive bowel obstruction."

E. W. Munnell reports in "Cancer" (1952) that age is one of the predisposing factors to ovarian carcinoma, the more mature lesions occurring with greater frequency after the menopause. Accurate diagnosis in any age group in still best determined by surgery.

Cabot says (Physical Diagnosis 1953) "the diagnosis of abdominal tumors is in most cases easy or impossible; but it is never easy unless one has a considerable knowledge of what tumors are likely to occur in each of the regions of the abdomen.

The most likely lesion of course in the right lower quadrant of the abdomen is a lesion involving the cecum and appendix. This usually derives from appendicitis but in the older age group a tumor may be more likely to cause a palpable mass.

"Tenderness, shape and mobility of the mass are of no value in differentiating between benign and malignant tumors, altho a nodular or irregular surface favors the malignant, and a smooth surface, a benign", according to a recent report by Butler & Bargen of the Mayo Clinic. In reporting on 215 patients with a palpable abdominal mass they found about one-third of all the cases had a malignant tumor mass. Three-fourths of palpable masses found to be malignant were carcinoma; some form of lymphoblastoma accounted for one-sixth; sarcomatous lesions made up the remainder".

"The presence of a **painful** mass may suggest a malignant neoplasm, since pain was present in one half the malignant and in only one-third of the benign group."

"Three-fourths of the patients with malignant lesions were over fifty years of age as compared with about half with benign lesions."

Along with the more common tumors one must remember the rare conditions, especially in this Clinical Club, so that unusual granulomas which suggest the presence of appendicitis or carcinoma must be at least mentioned. Some of these granulomas are prone to occur at the terminal ileum or cecum and diagnosis is made usually at operation.

Last must be mentioned **carcinoid tumors** of the appendix and small intestine. These are usually thought of as benign lesions occurring in younger persons but rarely are they found in later life and sometimes mestastases develop and they are thought to be slowly **growing carcinoma.** Obstruction may occur and tumor may be felt. They simulate appendicitis or carcinoma and can only be diagnosed by section after operation.

In view of these reports let's examine the positive findings in our case again:

We have an 86 year old negress with arteriosclerotic heart disease, hypertension of at least two years duration, cardiac enlargement with a grade III blowing systolic murmur at the

apex without decompensation, who has evidence of old atelectasis in the lower lung areas, elevation of left diaphragm; a mass in the right lower quadrant of the abdomen which becomes infected and painful; feels smooth, firm and tender; with x-ray examination showing a poorly filled cecum, indented medially by the mass persistently dilated loops of small bowel on the left, as well as several sigmoidal diverticulae. Some relief of pain is obtained by Harris tube in the lower ileum. Operation is done.

The most plausible diagnosis in our case seems to me, even in an elderly negress, to be **appendiceal abscess.** This may turn out to be a tumor with secondary infection probably carcinoma or **carcinoid tumor.** Because of the arteriosclerotic heart disease one certainly would have to be suspicious of thrombo-embolic phenomena in the mesentery, or even aneurysm of a large vessel, but the presence of such a lesion is difficult for me to visualize from the picture presented here. Such a diagnosis as omental or mesenteric hemorrhage, would be a "long-shot" based on known arteriosclerotic disease, in an elderly person who suddenly developed a lower right abdominal tumor.

My diagnosis is:

(1) Appendiceal abscess

(2) Carcinoma or carcinoid tumor.

DIFFERENTIAL DIAGNOSIS

DR. RICHARD WARREN: May I see the x-ray films?

DR. CHIU-CHEN WANG: In the films of the chest there are a few strands of basal atelectasis in both lower lung fields. The left leaf of the diaphragm is somewhat elevated. The heart is enlarged chiefly in the region of the left ventricle. The arch of the aorta is tortuous and calcified. Plain films of the abdomen reveal multiple dilated loops of small bowel principally confined to the left side of the abdomen and a suggestion of a large soft-tissue mass overlying the right lower abdomen. This mass seems to displace the dilated gas-filled loops of small bowel to the left. There are some gas and feces in the rectum.

The intravenous pyelogram shows normal kidneys. The lower pole of the right kidney can be well traced. The right ureter is displaced somewhat to the right, and the right psoas-muscle shadow cannot be so well seen as the left. Barium-enema examination reveals multiple diverticula distributed in the distal colon. A distinct soft-tissue mass is again noted in the right lower quadrant of the abdomen. The cecum — I assume it is the cecum because the terminal ileum is not filled — shows a pressure defect medially. Spot films of the sigmoid region give no positive evidence of diverticulitis.

DR. WARREN: Would you say that the ureter is displaced laterally or medially?

DR. WANG: Laterally.

DR. WARREN: And the defect in the cecum is an external pressure defect?

DR. WANG: As far as I can tell.

DR. WARREN: One more question about the x-ray films: Would you say that the sigmoid is not over to the right?

DR. WANG: No.

DR. WARREN: In this 86-year-old woman with a mass in the right lower quadrant the number of possibilities is large. From the x-ray films themselves I get a very different impression about the mass than I did from reading the protocol, which states that it occupied the whole iliac fossa. This mass seems to have been higher, more medial to the cecum and nearer the midline than I had been led to believe. I do not wish to make excuses, but I should like to emphasize the obvious fact that by palpating a mass one has a much better idea of where it lies and how fixed it is. Words, no matter how lucid, cannot till one, and in this elderly patient, whose medical history was possibly not entirely accurate, abdominal palpation was the most important clue to diagnosis. There are degrees between being fixed and being movable that are important in differential diagnosis. For instance, an appendiceal abscess has more prominence and mobility to its outer aspect than a retroperitoneal tumor.

The informatoin given suggests so many possibilities that I shall discuss first those I am fairly sure I can eliminate. According to the x-ray films, the mass did not involve the urinary tract and did not seem to arise in any of the pelvic organs. There was tenderness on the right side on pelvic and rectal examination, but there was no mass mentioned as palpable by these routes. The uterus had been removed. There is no information whether the ovaries were removed at the time of the hysterectomy, but despite this I believe the ovaries are ruled out.

DR. BENJAMIN CASTLEMAN: We looked for the old record, but could not find it. The

patient was said to have been operated upon in this hospital.

DR. WARREN: Having dismissed the less likely possibilities, I should like to consider what the mass was doing to the patient. It was not causing intestinal obstruction. During the whole time prior to admission to the hospital she had daily bowel movements, and there was no vomiting until the last day. There were some dilated loops of bowel, but they are compatible with the peritoneal irritation that I am certain this mass was causing.

Whether the peritoneal irritation was caused by infection, infarction or hemorrhage is perhaps the crux of the problem. Let me look at the slim evidence. The white-cell count was 15,000 on admission but fell to normal during the preoperative preparation period of four days. minimal fever is also against an acute infection. With hemorrhage, one would expect an anemia; the 12.5 gm. of hemoglobin is not much below normal for a woman of this age. I should have liked to have subsequent hemoglobin determinations to confirm that point. Perhaps the vital signs and the course fit an infarcted mass better than either infection or hemorrhage.

Let me discuss the various anatomic sources from which the mass may have originated. Could it have arisen in the bowel? If so, one must seriously consider the appendix since the cecum seems excluded by x-ray examination. A ruptured diverticulum of the cecum is a possibility. These customarily occur in middle life, but this patient's age is no barrier since anything that occurs after the age of eighty-six is unusual! That the patient had diverticulosis of the descending colon is no help in the diagnosis of ruptured diverticulum of the cecum since diverticulosis is acquired and the diverticulum congenital. The possibility of a Meckel diverticulum is good. A Meckel diverticulum producing a mass of this size, however, would be rotated and infarcted and would cause more intestinal obstruction than this patient had. She also had a negative guaiac test on one stool examination, for what that is worth. The question of diverticulitis of the sigmoid over on the right side is something that always has to be considered. I was badly fooled many years ago by such a condition and have been on the lookout for it ever since, but of course, I have not seen it again. Carcinoma of the cecum, the small bowel or the sigmoid seem to be excluded.

What conditions besides these originating in the bowel should I include? Mesenteric cyst, omental cyst and torsion of the omentum are all possibilities. A torsion of a mesenteric or omental cyst is possible; disease of the omentum would be unlikely. It is of great interest, if it was a valid observation, that a physician noted a tumor on a routine examination before the symptoms developed; that would rule out a great many things, such as ruptured appendix, ruptured diverticulum and Meckel's diverticulum.

Cold disease of the blood vessels have been present? A mass of this kind causing acute symptoms in an elderly hypertensive woman brings to mind a ruptured mesenteric vessel that had become aneurysmic — so-called mesenteric apoplexy. The patient had symptoms for fifteen days prior to operation, but at no time was pulsation in the mass noted. I am sure that I should have been provided with that information if it had been present. I am going to discard that diagnosis.

Enlarged lymph nodes, inflammatory or lymphomatous mesenteric or retroperitoneal nodes with infarction or hemorrhage are a real possibility. When I read the protocol originally, I was disposed to rule out a retroperitoneal tumor, but since the ureter seems to have been displaced, I shall have to reconsider that — I think lymphoma or some other type of retroperitoneal tumor should remain in the front of the differential diagnosis, particularly since, according to the x-ray films, the mass was presenting higher and more medially in relation to the cecum than the protocol intimated.

Was this mass metastatic carcinoma from some other region? Although it is possible, there was no obvious source, and I think I should be scraping the bottom of the barrel to bring that in as a differential diagnosis.

A foreign body always has to be considered. People swallow fishbones, which sometimes cause a small perforation in the ileocecal region and lead to an inflammatory mass of this kind; they sometimes end up in the sigmoid. A foreign body may have been left behind at the previous operation, but that type of foreign-body reaction after such a length of time is extremely unlikely.

I shall say that it was probably tumor of the lymph-node variety — a lymphoma in the ileocecal region that had been deprived of its blood

supply, had become infarcted and had grown to a fairly large mass.

A PHYSICIAN: Is lymphoma common at the age of 86?

DR. CASTLEMAN: We do not have too many patients at the age of 86. At that age, a lymphoma would be more likely to be of the follicle type, which occurs in elderly people and may produce quite a large avdominal mass in this fashion.

DR. GLENN BEHRINGER: Our opinion on the ward was that this patient had an appediceal abscess, and we treated her accordingly for sevearal days without any change in the course; the local pain did not subside, and the fever continued. We believed she should have an exploratory laparotomy, and on the evening of the fourth day we took her to the operating room. Under anesthesia, the mass was palpated higher in the abdomen than had been previously thought; it was at the level of the umbilicus and out of the pelvis, as pelvic examination under anesthesia proved. We changed our diagnosis preoperatively to retroperitoneal tumor.

CLINICAL DIAGNOSIS

Retroperitoneal tumor

DR. WARREN'S DIAGNOSIS

Retroperitoneal lymphoma with infarction.

ANATOMICAL DIAGNOSIS

Torsion with gangrene of gall bladder.
Cholelithiasis

PATHOLOGICAL DISCUSSION

DR. BEHRINGER: On opening of the abdomen after we had aspirated about 500cc. of serosanguineous fluid, it became obvious that the mass was a gangrenous hollow viscus about 10 to 15 cm. in diameter. On further enlarging the incision we were surprised to find that it was the gall bladder. The anatomy was rather unusual; the patient had a long, dilated gall bladder that was full of stones and was held to the liver by a small mesentery not more than 2.5 cm. in length. The gall bladder had twisted counterclockwise twice on its supporting structures, the small mesentery, the cystic artery and the cystic duct. Choleystectomy was performed; the patient recovered and has left the ward.

DR. CASTLEMAN: The mass felt six days before the patient had the acute torsion may have been an enlarged gall bladder. Could you tell whether there had been a stone impacted in the duct?

DR. BEHRINGER: The stones in the gall bladder were quite large, and the duct was tiny. I do not believe that a stone could have passed through the cystic duct.

DR. CASTLEMAN: Sections of the gall bladder showed so much necrosis and gangrene that one would never have recognized it as gall bladder; no muscle tissue could be seen. I am surprised that the gall bladder had not perforated and caused a peritonitis.

DR. WARREN: I should like to ask Dr. Wang if he would revise his interpretation of the displacement of the ureter.

DR. WANG: It was slightly displaced!

EIGHT-DAY BERMUDA-NASSAU CRUISE PLANNED FOLLOWING A.M.A. MEETING

CHICAGO — An outstanding eight-day cruise to Bermuda and Nassau has been arranged for physicians and their wives following the A.M.A. meeting at Atlantic City in June.

The party will sail from New York at 7 p.m. Friday, June 10, aboard the palatial Furness Line steamer Ocean Monarch. The ship docks early Sunday at historic St. George's Bermuda, for church services and a tour of the city. A sightseeing trip, a visit to Castle Harbour Hotel for tea and a calypso concert are set for the afternoon. On Monday morning a tour of Hamilton, the island's capital, is scheduled prior to sailing at 1 p.m.

Tuesday is spent at sea with a variety of programs planned — or the day can be used to rest up for Nassau — the next port of call. The party goes ashore at Nassau, capital of the Bahama Islands, early Wednesday. Beaches and cabanas of the British Colonial Hotel are available and a dinner dance will be held there that evening.

The ship leaves Nassau at midnight and the last two days of the tour are spent at sea — with traditional gala party set for the last night aboard. The ship docks in New York at 9 a.m. Saturday, June 18.

All space is being held for the A.M.A. and reservations should be made immediately. For further information contact W. M. Moloney, Chicago, Burlington and Quincy Railroad, 105 West Adams St., Chicago.

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THE *President's* PAGE

DOCTOR-PATIENT RELATIONSHIP

THE MOST DISQUIETING THING WHICH COMES TO MIND IN READING THE MANY LEGISLATIVE EFFORTS TO PROVIDE MEDICAL CARE FOR EVERYONE, IS ALMOST COMPLETE DISREGARD OF THE DOCTOR-PATIENT RELATIONSHIP AND OF THOSE BASIC PHILOSOPHIES OF MEDICINE WHICH HAVE WITHSTOOD CENTURIES OF CHANGING ECONOMIC AND SOCIAL CONDITIONS PRIOR TO THE PRESENT ERA. THE MEDICAL PLANS OF GERMANY, ENGLAND, THE SCANDINAVIAN COUNTRIES AND OTHER EQUALLY FORWARD LOOKING NATIONS HAVE NEVER BEEN ABLE TO SOLVE THIS PROBLEM BY LEGISLATION AND IT IS OBVIOUS THAT THE UNITED STATES IS HAVING A SIMILAR PROBLEM: OBVIOUS BECAUSE OF THE VIOLENT AND SUSTAINED OBJECTION OF ORGANIZED MEDICINE TO RELINQUISH THOSE THINGS IN OUR PRACTICE WHICH WE CONSIDER OF MORE VALUE THAN MONETARY GAIN. IT IS ENCOURAGING TO NOTE THAT THROUGHOUT THE UNITED STATES THE PRESS IS BEGINNING TO TAKE NOTE OF OUR PROBLEMS IN A MORE FAVORABLE LIGHT AND THE EVIDENCE COMPILED BY THE AMERICAN MEDICAL ASSOCIATION WOULD INDICATE THAT THE PATIENT IS AWAKENED TO THE THREAT OF THIS RELATIONSHIP WITH HIS PHYSICIAN AND DOES NOT WISH IT TO BE DESTROYED.

OSCAR W. THOENY, M.D., PRESIDENT,
ARIZONA MEDICAL ASSOCIATION INC.

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible

WHY NOT POLL THE MEMBERS?

FOR the past several years the AMA has wheeled out its lobbying artillery and, it is though by some, to good advantage. This in itself is an accomplishment that finally such a ponderous organization with such widespread membership could have a policy and begin to exert it effectively.

Now, the policy arrived at by an organization such as the AMA sometimes comes to the forefront by a long and circuitous route. Theoretically it arises, I suppose, with the concurrence and consent of the House of Delegates. About as close as that ever comes to the grass-root level is that the delegates are representatives from the State Society level.

Did anyone ever hear of the AMA canvassing its membership for an opinion on a vital legislative issue? The Nation Association of Independent Business Men whose membership runs around 40,000 make that a regular habit and they poll their membership and expect the answers in within a week's time, whenever a sensitive piece of legislation is brought up. This guides their Washington office in their decision as to whether to support or not legislation that is ground through that famous mill on Capitol Hill.

Now, it seems to this observer that this is another instance in which the County Societies have failed to exert their best influence. It would be no problem at all to canvass by circular the members of a local society and have an answer within a week. How does the opinion of the citizen who is supporting the AMA compare with their avowed policy on such vital issues as medical care for service men's dependents, supplementary re-insurance for catastrophic illness, health insurance for employees of the Government, and treatment for non-service connected disabilities of veterans?

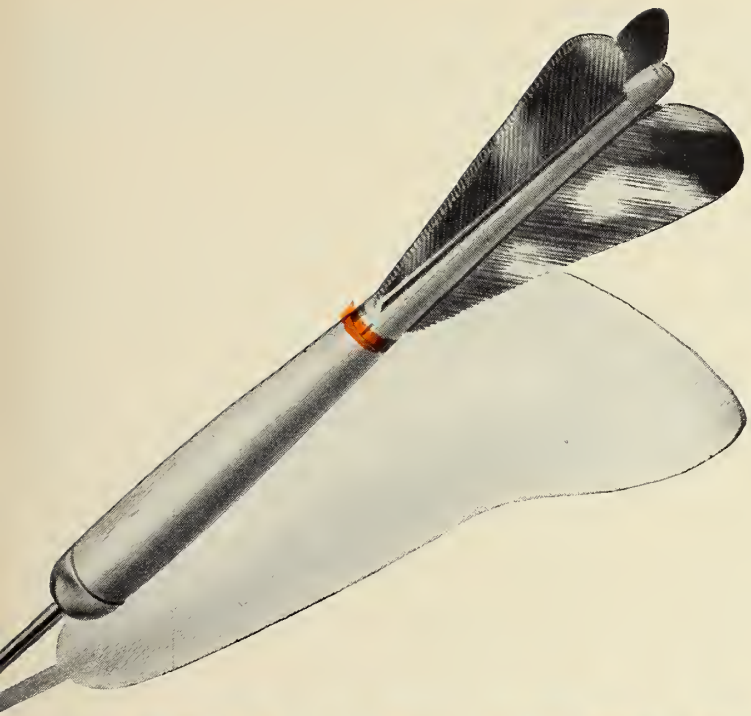
On the last issue more than likely we would get a close to unanimous opinion, but I wonder on the others how many of the citizens actually know what the AMA decision has been on the problems concerning these other matters which are now before Congress again.

John W. Kennedy, M.D.
Secretary, Maricopa County
Medical Society

CORRECTION

In the December 1954 issue of the Arizona Medicine in an article entitled **Pentothal Sodium Anesthesia: A Phantasy**, the word PENTOTHAL refers to the Abbott brand of thiopenthal. Through some editorial error, this trademark was not made clear in the article.


ACH



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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

WELL, it happened again! And, most likely, it won't be the last time. . . . Yesterday afternoon I called on four patients, two of them recovering from tuberculosis. Three of the four had just heard radio reports of a "cure for TB", but they weren't sure of the name, or who did the work, or anything except that it came from "VA hospitals in New York"'. . . . I felt a little silly, warning them (in the same old way) to wait for more information, etc. . . . Me, I read the V.A. 'Reports'. I go to meetings. I even know the president of the American Trudeau Society! But do I know the cure for TB? Not until today's paper. . . . It is called 'Cycloserine' by the Commercial Solvents Corp. It was used in New York by Epstein, Nair, and Boyd, but not yet at the V.A. (It was reported at the 14th VA-Army-Navy Therapy Conference at Atlanta, and the VA will soon start a pilot study of 200 cases). . . . The drug is said to be an antibiotic and, most importantly, is the first such anti-TB drug to be given by mouth. It is said to have a powerful effect, but the reported series was only 37 patients. Eleven of those "severely ill" patients became negative by culture after 3 or 4 months of drug usage. . . . . No data on toxicity or resistance (though the VA wouldn't use it if too toxic). . . . We can give more data when we get the details next week, but meanwhile we'll have the Little Woman tune in on the news programs for us, (though maybe patients like to beat the doctor to the drug, with the Speed of Sound). . . . It will be quite awhile before Cycloserine is available, and we'll have to mog along with old-fashioned pyrazinamide (still research).

Today's paper also reported an interesting possibility for PREVENTION OF ASTHMA which Bowen of Houston, Texas, told to the American Academy of Allergy in New York. . . . He gave monthly 'shots' of GAMMA GLOBULIN to 75 children. The object was to decrease the incidence of respiratory infections by increasing the supply of antibodies. . . . The results were 50 per cent reduction of asthmatic attacks compared with a control series.

The basic ANTIBIOTIC NAMES are not easy to remember, since they are similar, and no drug-house likes to mention the names of others. After all, does Gimbel's tell Macy's? . . . The most recent is TETRACYCLINE, with brand names 'TETRACYN' & 'ACHROMYCIN'. CHLORTETRACYCLINE is branded 'Aureomycin'. OXYTETRACYCLINE is known as 'Terramycin'. . . The other new one is ERYTHROMYCIN, with the trade names 'Erythrocin' and 'Ilotycin'. . . . Data on these were given by Romansky of Washington, D. C. at a meeting of Military Surgeons, and reprinted in 'Hospital Topics'.

Anyone not familiar with Du Pont advertising would not easily understand the assurance that every person uses (indirectly) two 97-pound carboys of SULFURIC ACID per year. . . Back in your day the quota was far less, and sulfur was spelled with a 'ph'. . . . Today the chemical has more uses than as a laboratory reagent, and it is essential in making drugs, plastics, cellophane, rayon, fertilizer, steel, paint, paper, etc. Etc. . . . It is amazing, and a quart a day per person hardly seems too much.

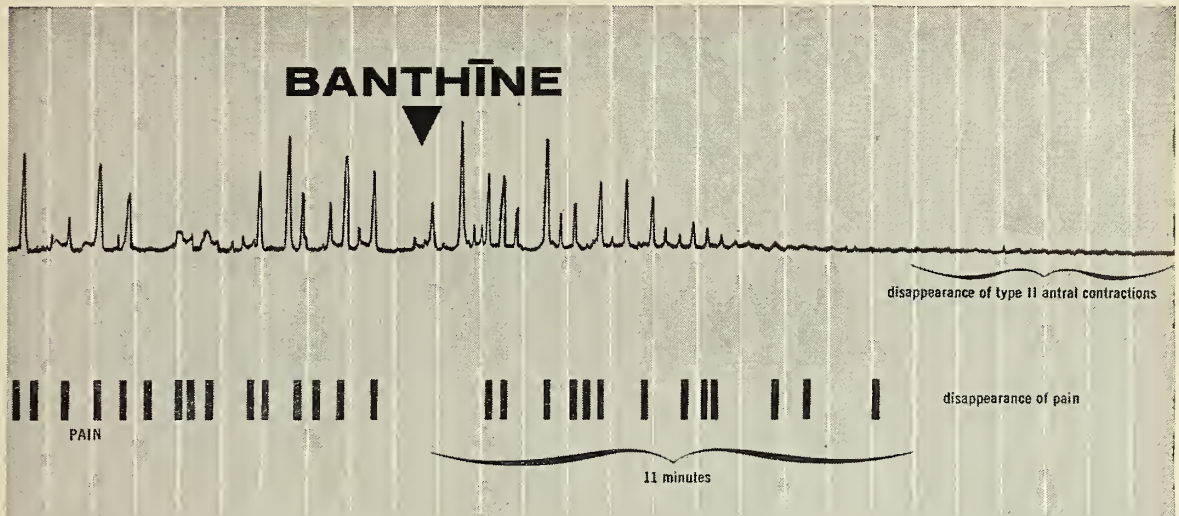
F. Finnerty Jr., of Washington, D. C., told the A.M.A. clinical meeting in Miami that his OPD therapy of the early TOXEMIA OF PREGNANCY includes: 1. Restriction of sodium to 200 mg. per day; 2. Acetazoleamide every other day; Rising doses of Apresoline 4 times a day; Serpasil, 0.1 mg per day. . . . He hospitalizes if retinal sheen or albuminuria persist for 2 weeks, even if the blood pressure has dropped. . . . He then uses Serpasil, Apresoline, Cryptenamine, followed by induced labor or cesarian section for eclampsia.

The JAMA abstracted the article from ARIZONA MEDICINE by Stahnke of Tempe which demonstrated that MEPERIDINE (Demerol) should NOT be used in scorpion stings. It acts synergistically with the venom, and can be (and has been) fatal.

'Hospital Topics' gives two pages of pictures and reports of the ARIZONA HOSPITAL ASSOCIATION meeting in Phoenix. . . . The usual pictures of administrators, but unusual pictures of barbershop quartets made up of administrators, skits, contests, and the very attractive Good Sam. Nurses' Chorus. . . . It was clear too that the group was not only well entertained, but well instructed. . . . If only the guys and dolls (you should excuse that word, Sister) who run the hospitals had shifted from calling themselves 'superintendant' to a shorter word than 'administrator'!

The Bulletin of the Nat'l. TB Ass'n. reports to the world that "TWO ARIZONA HOSPITALS have added FACILITIES FOR TREATMENT OF TUBERCULOSIS patients during July. They are

BANTHĪNE® IN PEPTIC ULCER



Effect of 100 mg. of Banthīne administered orally on antral gastric motility and duodenal ulcer pain.

Hightower, N. C., Jr., and Gambill, E. E.: Gastroenterology 23:244 (Feb.) 1953.

Hypermotility and Hyperacidity

A recent evaluation of anticholinergic therapy in peptic ulcer emphasizes the fact that now the profession has at its disposal agents that are "effective in reducing both secretory and motor activity of the stomach."

The effect on motor activity is generally more pronounced and less variable than on secretion; pain relief is usually prompt; a high degree of effectiveness is noted in ambulatory ulcer patients.

Ruffin, J. M.; Texter, E. C., Jr.; Carter, D. D., and Baylin, G. J.: J.A.M.A. 153:1159 (Nov. 28) 1953.

With its proved anticholinergic effectiveness, Banthine has been found extremely useful in the medical management of active peptic ulcer, whether duodenal, gastric or marginal.

The immediate increase in subjective well-being and the simplicity of the Banthine regimen assures patient cooperation. The recommended initial therapeutic dose is 50 or 100 mg. (one or two tablets) every six hours around the clock, with subsequent individual adjustment. The usual measures of diet regulation, rest and relaxation should be followed.

Banthine is effective in other conditions caused by excess parasympathetic stimulation. These include hypertrophic gastritis, acute and chronic pancreatitis, biliary dyskinesia and hyperhidrosis. Banthine is contraindicated in the presence of glaucoma and should be used with caution in the presence of severe cardiac disease or prostatic hypertrophy.

Banthine bromide (brand of methantheline bromide) is supplied in scored tablets of 50 mg. and in ampuls of 50 mg. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

SEARLE

the Maricopa County General Hospital, where a 100-bed TB wing was opened, and St. Luke's Hospital in Phoenix, which now has 146 beds for TB patients". . . . This column would like to add its congratulations to the hospitals, the Boards, the staffs, the city of Phoenix, the State of Arizona, and the administrators. . . . G. Osler hopes that the best infectious disease precautions are used, that the student nurses are given BCG vaccine, and that the patients are as grateful as they should be for this good break.

Lynch of St. Paul summarizes some of the knowledge on 'STEROID THERAPY IN DERMATOLOGY' in MINNESOTA MEDICINE. . . . Cortisone should not be used for topical therapy since it is useless. Hydrocortisone is the proper drug. . . . The drug will not control infection, so an antibiotic should be used in combination, or the period of relief from the acute symptoms should be used to find and eliminate the source of dermatitis. . . . The chief relief is obtained from itching and/or allergic lesions. . . Localized neurodermatitis responds best. . . . If the dermatitis is too extensive for surface treatment, cortisone or hydrocortisone by mouth may be carefully used, or ACTH by injection. . . . We add an editorial warning against the incautious use of the steroids, not only for their effect on electrolytes but as a 'rouser' of latent TB.

The treatment of LOEFFLER'S Syndrome by CORTISONE (or by transfusions) was described by the late Dr. Louis Mark of Ohio in 1954, and mentioned here a few months ago. . . . The speed of response to the drug is amazing. .The eosinophilia and dense patchy lung lesions melt away, often as much as 50 per cent in a few days, and 95 per cent in a few weeks. . . . If the tuberculin skin test is positive one can decrease the hazards by using streptomycin and isoniazid as a cover.

Steroid therapy, diuretic therapy, and parenteral fluid replacement all raise the problem of SODIUM and POTASSIUM RELATIONSHIPS. . . . The equilibrium across intracellular-extracellular membranes is maintained by an active transfer of Na, plus a compensatory exchange of K. . . . The 'redox' theory (reduction-oxidation system) suggests that the Na is carried by enzymes which can alternate between a negatively charged and neutral state. . . . The effect of a dose of cortisone or a mercurial requires a chapter instead of a paragraph.

Do you have a large enough series of ACUTE MYOCARDIAL INFARCTIONS, treated by the 'CHAIR REST REGIMEN' to summarize for a report? Could you join with a colleague for that purpose? . . . It has been years since Sam Levine described the disadvantages of recumbency, but only a couple of years since he described the 'armchair' method. . . . It is almost a year since Wilson and Ward reported success in 30 cases. They found lower mortality, improved morale, and shorter convalescence. . . . The more evidence the better, and perhaps you could top the total of 30 cases. I think publication could be arranged in a very good medical journal.

The CORONARY ARTERY CIRCULATION is being approached surgically and obliquely (and infrequently) by Beck and colleagues of Cleveland. It requires a tremendous daring to operate on the heart of a person with coronary disease, but Dr. Beck does it, and lost only 2 of 27 cases in 1954. . . . There is a sort of 'Thru the Looking Glass' sequence about the surgery. Alice found that the person who was injured did the crying and bandaging beforehand. Dr. Beck states that "surgical operation protects the heart after a major coronary artery is occluded, provided the OPERATION IS DONE BEFORE THE OCCLUSION OCCURS!

If you haven't used, or at least heard of, CHLORPROMAZINE you must have been asleep on Cloud Seven, with earmuffs. It is said by pharmacists to be 'hot', and the clinical status is obvious from the number of publications. Imagine anything except an antibiotic or a vitamin causing such a furore! . . . The original uses are now being confirmed, subdivided, and analyzed. The clinical indications still include various psychotic states, adjuvant use with opiate drugs, and as an anti-emetic for various types of nausea, and vomiting. . . . The side effects and precautions are as previously noted. A new hazard is that of contact dermatitis. . . . 'The Modern Hospital' published a survey of the drug by consultants from the University of Illinois College of Medicine. They describe the evidence in favor of a 'vomiting center' in the medulla of some animals. The cortex is essential to nausea, but not to vomiting. There is an area adjacent to the center which is called a 'chemoreceptor trigger-zone". This zone is sensitive to emetic agents, and may pass on the stimuli from the vestibular organ. Stimuli may go to the center from the stomach and other areas. . . . The pharmacologic action of chlorpromazine is diverse, and you'll have to get them from 'The Modern Hospital' mag., or from Thorazine advertising.

Can you guess where this somewhat rough quotation comes from? "No class of men needs friction so much as physicians; no class gets less. The daily round of a busy practitioner tends to develop an egoism of a most intense kind, to which there is no antidote. The few set-backs are forgotten, the mistakes are often buried, and 10 years of successful work tend to make a man touchy, dogmatic, intolerant of correction, and abominably self-centered. To this mental attitude the medical society is the best corrective, and a man misses a good part of his education who does

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not get knocked about a bit by his colleagues in discussions and criticisms. . . . The very marrow and fitness of books may not suffice to save a man from becoming a poor, mean-spirited devil, without a spark of fine professional feeling, and without a thought above the sordid issues of the day. . . . The man who knows it all and gets nothing from the society reminds one of that little dried-up miniature of humanity, the prematurely senile infant, whose tabetic marasmus has added old age to infancy. . . . He feels better at home, and perhaps that is the best place for a man who has reached this stage of intellectual stagnation". . . . It is from the 'Counsels and Ideals from the Writings of William Osler', and all that THIS Osler can add is a modern term for the condition (unknown in Arizona) — "medical progeria".

PIMA COUNTY CELEBRATES 50TH ANNIVERSARY

THE Pima County Medical Society celebrated its Fiftieth Anniversary with a special program on the evening of December 9, 1954. Honored guests included the Pioneer Doctors of Pima County Medical Society who are Drs. Ira Huffman, Meade Clyne, Charles Thomas, Jeremiah Metzger, Samuel Townsend, and Edward Gotthelf. Twenty-five Year Medalists of the Pima County Medical Society and Fifty Year Club Members of the Arizona Medical Association were also honored. The excellent printed program of this dinner meeting contained a history of the Pima County Medical Society prepared by Bernice Cosulich and with the permission of the Pima County Medical Society we publish it in toto here.

FIFTY YEARS OF SERVICE 1904-1954

The squeak of wagon wheels and clip-clop of horses hoofs in the dusty streets could be heard by six men sitting in a small room. They paid no attention to the sound, nor to the rusty whirr of windmill blades and the shouts of Tucsonans, who greeted one another.

The men were in the office of Dr. W. V. Whitmore. It was the 13th day of October, 1904. They had gathered to organize the Pima County Medical Association, later to be called Society. Presiding was tall, distinguished-looking Dr. Whitmore. The others included: Dr. A. W. Olcott, a dark, slender, quick-moving man; Dr. J. W. Lennox, whose patients included the miners at Helvetia, south of Tucson; Dr. Mark A. Rodgers, an aggressive man of medium height and stubby mustaches; Dr. W. B. Purcell, tall, dark and positive, and Dr. H. E. Crepin, medium statured, soft-spoken and retiring. Several of their Tucson colleagues had not attended.

After hours of discussion, the six had drafted the Constitution and By-Laws of the new organization. They then elected the Society's first officers: Dr. Whitmore, President; Dr. Olcott, Vice-President, and Dr. Lennox, Secretary-Treasurer.

The yellowed pages of the Society's first minute book recorded those events of fifty years ago in a neat script, but did not comment on the frontier village in the Territory of Arizona, which was taken for granted.

Before gleaning some of the highlights from the eventful fifty years just passed, it is rewarding to glance back quickly over even earlier years of Arizona's medical history.

The first practitioners of the healing arts in Arizona were Indian Medicine Men, who still exist on the reservations. Little is known of physicians among the Spanish conquistadores. None was mentioned when the Royal Presidio of Tucson was built in 1776, nor in its 1820 census, which listed 396 resident of the walled fort. There is an equal dearth of information about doctors during the Mexican occupation of Tucson.

The United States bought Southern Arizona from Mexico in 1854. That Gadsden Purchase resulted in a wave of Anglo-Americans arriving from the East to settle in Tucson and Arizona. Their influx brought on the Indian War with the Apaches, which ended with Geronimo's surrender in 1886. Military posts were built to protect the citizens, and doctors attended not only the troops but the pioneers. Some of these army physicians became famous after leaving Arizona and one earned distinction in Tucson. Four of them serve to illustrate this early period.

Brig. Gen. B. J. D. Irwin was a fighting army surgeon. He led a small detachment of troops against a large Indian force at Apache Pass in 1861, defeating it. When at Fort Buchanan, he rode horseback 60 miles through Indian country to save the life of a Dragoon Stage Station employee.

Major Walter Reed is world-known for his work in proving that yellow fever was carried by mosquitoes. Less well known is the fact that he was stationed at Fort Lowell, east of Tucson, in 1876.

General Leonard Wood was a young army surgeon at Fort Huachuca from 1885 to 1889. With Theodore Roosevelt, he organized the "Rough Riders" to serve in the Spanish-American War, and he earned many distinctions during World War I.

The fourth man was Dr. George E. Goodfellow, one of Arizona's most colorful and distinguished physicians. He served at Fort Lowell in 1879. He performed the first successful perineal prostatectomy in medical history, doing so in Tucson on September 29, 1891. He was among the first to advocate the use of spinal anaesthesias, and open air treatment of tuberculosis.

Dr. Goodfellow practiced in Tombstone when it was at its roughest and toughest, 1882 to 1891. He is said to have had more experience with abdominal bullet wounds than any other American

surgeon. After one Tombstone battle, he said of a victim's body: "It is rich in lead, but too badly punctured to hold whiskey." He performed the autopsy on Morgan Earp of the notorious Earp-Clanton feud.

A man of dignity, hot temper, and austere expression, he stood six feet tall and walked slightly tilted back because he had the heels cut off his shoes. Fearless and loving adventure, he also was gentle with the sick. He said a surgeon "should have the eye of an eagle, the heart of a lion, and the touch of a woman." During the 1887 earthquake, he drove his buggy into Sonora to help the injured, the Mexicans regarding him as a saint. In appreciation, President Diaz gave him an Arabian horse and one of Maximilian's jewels.

Dr. Goodfellow liked to drive railroad engines. His most spectacular locomotive trip was from Fairbanks to Tucson to try to save the life of Dr. John C. Handy, who was shot, in 1891. He made the trip in record time, but his patient died.

Shortly after moving to Tucson in 1891, he performed that first successful perineal prostatectomy. in 1904, he reported 78 of these operations with but two deaths. Men from over the United States sought him in Tucson until 1896, when he moved to San Francisco.

Good horsemanship was a requirement of Tucson's early doctors. Dr. Charles B. Hughes, who began practicing here in 1860, one day rode horseback 40 miles in four hours, from Tucson to Canoa Ranch. There he attended Mrs. Larcena Page, who had been captured by Apaches, injured and left to die. She crawled 16 miles before rescuers found and took her to the ranch.

Dr. Charles H. Lord, a Civil War surgeon, came to town in 1866, but practiced briefly. He founded Lord & Williams Wholesale Mercantile Company. He was postmaster, and his company held Tucson's first franchises (1880-1881) for gas and electric light plants and for a street railroad system. When his company failed, he left for the South.

The records of the Pima County Board of Supervisors show three interesting items: the first county physician was Dr. Edward Phelps, who received $50 a month in 1870; the first mention of a county hospital was in 1871, and in 1877, $3,600 was paid to Dr. Handy for care of the county's indigent sick.

Notable was Pima County's Ordinance No. 13, passed in 1875. It required physicians to file their diplomas from accredited schools with the county recorder or be fined from $25 to $50. The Territory of Arizona did not take similar action governing all counties until 1881, and subsequently set up the State Board of Medical Examiners.

St. Mary's Hospital was established by the Sisters of St. Joseph the year the Southern Pacific Railroad reached Tucson, 1880. That year Ordinance No. 23 was passed prohibiting "keeping places for smoking opium."

Tucson was still an adobe village when the University of Arizona opened in 1891. That year the Arizona Medical Association was formed and the first two Pima County men to join it were Dr. H. W. Fenner and Dr. Whitmore.

Dr. Fenner was one of Tucson's best-known physicians when the Pima County Medical Society was organized in 1904. He enjoyed telling colleagues how he arrived on a stagecoach in Bisbee in 1881, equipped with only a hypodermic needle, and had paid $50 for the practice of a Brewery Gulch doctor, who was being run out of town. Two years later he moved to Tucson. His Steam Locomobile was Tucson's first car; it blew up once as he drove it. He was division surgeon for the Southern Pacific; a regent at the University, as were Dr. Handy and Dr. Whitmore; supervised the building of Carnegie Library, and gave the Tucson Woman's Club its land.

The Territory of Arizona was beginning to grow, citizens boasting in 1900 of its population of 122,-931 (compared with over a million in 1954), and Tucson's total of 7,731 persons (compared with the Chamber of Commerce's 1954 estimation of 192,000).

The Society invited Santa Cruz County physicians to join it in 1905, but did not invite those of Cochise County, probably because of the distance. Had it done so, perhaps young Dr. N. C. Bledsoe might have joined.

Military posts brought to Arizona its earliest physicians, as did mining companies and railroads. Dr. Bledsoe was chief surgeon for the Calumet & Arizona Mining Company from 1904 until 1933, when he moved to Tucson. He has the longest continuous record of practice in Arizona of any living member of the Pima County Medical Society. The Arizona Medical Association awarded him a Fifty Year plaque in 1953.

So far as is known, he had the first X-ray machine in Arizona, acquired in 1904. Dr. Joel I. Butler and Dr. Jeremiah Metzger had the first two in Tucson, after 1912. Dr. Bledsoe's was a Scheidel-Western, operated by wet cells and required ten minutes to take a picture. In that era there were no sphygmomanometers or rubber gloves.

While Dr. Bledsoe has practiced longer in Arizona than other Society members, Dr. Francis W. Allen's 56 years of practice in Missouri and Arizona exceeds the records of all. He began practice in 1898 in Missouri, where his father was a physician. Ill health sent him to Fort Mohave as a doctor for the United States Indian Service in 1921 and he served on the Pima Indian Reservation at Sacaton before moving to Tucson in 1923.

Dr. Allen was Pima County physician from 1935 to 1945, and was among the first group of doctors in 1948 who received a Fifty Year plaque from the state association. Last year, when 81 years old, he estimated he had delivered 8,000 babies — enough to populate a small town. He is still practicing in Tucson.

Another phase of Arizona medical history is exemplified in the life of Dr. V. A. Smelker, who began practicing in Nogales in 1908, moving to Tucson in 1931. Beginning with the Madero revolution in 1911, when Diaz was overthrown, Mexico was rocked by a succession of revolutions, which produced many "border incidents." Sometimes 30,000 troops were massed at Camp Stephen D. Little in Nogales. Dr. Smelker knew many of the fine Mexican families who sought political asylum in Nogales, Arizona, as regimes changed. He was the personal physician for two of Mexico's presidents, Plutarco Elias Calles and Alvardo Obregon, and still attends their families.

Dr. Ira E. Huffman began his practice in Tucson in 1907, continuing until he retired in 1945. As a captain, and later one of four honorary colonels, of the Arizona National Guards Medical Corps, he was aware of all international border incidents. He was even more aware of local problems, serving as a city councilman and then as Tucson's mayor, 1911 through 1915. Other doctors have participated in Tucson's municipal development, including Dr. Meade Clyne, who was chairman of the committee which drafted a new city charter, which he signed on January 31, 1929.

Dr. Huffman led the group of men who obtained Pastime Park as Tucson's first hospital for tuberculous veterans of World War I. During that conflict he was a major in the 158th Infantry's Medical Corps from 1917 until June of 1919. On returning to Tucson, he found 500 sick veterans without adequate housing, and needing medical care.

Returning to 1908, the Society urged Arizona's Territorial representative in Congress to "support the establishment of the National Bureau of Public Health." The U. S. Public Health Service was created by Congress in 1796, but periodically thereafter it was enlarged and reorganized. This was the Society's first action on pending legislation, but the minute books of subsequent years show the large part it played whenever municipal, state or national acts were proposed affecting public health.

Often the Society took the initiative in public health movements, for instance three actions in 1909: it urged school principals to notify families of contagious diseases; offered to help select a capable city milk inspector, and suggested that the University of Arizona establish a bacteriological laboratory for public health purposes.

The latter became a reality in 1912 when the Arizona State Laboratory was opened at the University. However, despite the united efforts of all interested in public health, Tucson had a smallpox epidemic in 1921, and a typhoid epidemic in 1925, although the Society for years had advocated pasteurization of milk.

There were but three physicians driving automobiles in Tucson when Dr. Meade Clyne arrived in January, 1910. They were Dr. Fenner, Dr. Olcott and Dr. Purcell, the latter being killed that year when his car overturned near the San Xavier mines. All other doctors used horses and buggies. Although Dr. Clyne had come for his health, he was sufficiently recovered so he could go to Phoenix, July 4, 1910, for his state medical examination. There he heard a blow-by-blow account of the fight in Wyoming in which Jack Johnson defeated Jim Jeffries. A Morse code telegrapher shouted out the details.

Dr. S. H. Watson came to Tucson in 1912 and in 1919 he established the first clinical laboratory where doctors might have analyses made. Dr. Charles S. Kibler directed the laboratory for a time. Tucson hospitals had their own private laboratories, but prior to 1919 physicians had sometimes sent specimens to Phoenix. Today, there are about 30 commercial, private and hospital laboratories.

Dr. Clyne and Dr. Watson became partners in 1921, and from that association grew today's Tucson Clinic which with the Thomas-Davis Clinic were the precursors of the trend for several specialists to work in one organization. Others, working independently but in one location, have developed such units as the present Medical Square of Tucson.

One of Dr. Clyne's outstanding contributions to the Society's history was inducing its members to give their services to the Pima County Hospital. Such a program was begun in 1937 and today Society members donate 800 man-hours a month to the hospital.

A brief review of the development of Tucson's hospitals may be inserted here. Fort Lowell's 12-bed hospital of 1875 pre-dated St. Mary's establishment by five years. Dr. Mark A. Rodgers built a hospital bearing his name in 1903 and, as one of its founders, got the Old Pueblo Club members to build next door. Renamed the Arizona Hospital, it operated until the mid-1920's.

The Whitwell Hospital at North First Avenue opened in 1906, a memorial to Dr. Sturges B. Whitwell of New York City. Dr. Jeremiah Metzger acquired it in 1911, opening the first private sanitarium for tuberculosis. It became the Tucson Hospital in 1924 and he sold it in 1927. As the Southern Methodist Hospital it functioned until the late 1930's.

Pastime Park opened March 15, 1920, as a 60-bed, barracks-like hospital for World War I veterans. Its direction by the U. S. Public Health Service was transferred to the control of the U. S. Veterans' Bureau, which in October of 1928 opened the present facility on South Sixth Avenue with its 402 beds.

The privately endowed Desert Sanitarium on Grant Road was given to the people of Tucson by the widow of one of its founders, Mrs. A. W. Erickson, and opened as the Tucson Medical Center, November 10, 1944.

Pima County had a variety of hospitals until St. Mary's opened and then used its facilities for

many years. It had a small unit for tuberculous patients on South Sixth Avenue prior to 1936 when the present hospital was opened.

Among Tucson's other hospital facilities are the Southern Pacific Hospital and Sanitorium, Comstock Hospital for Children, St. Lukes -in-the-Desert, the Elks State Hospital, the San Xavier Indian Hospital, Barfield Sanitorium, and Davis-Monthan Air Force Base Hospital.

During the first 30 years of this century, physicians of the nation sent their tuberculous patients to Tucson often without adequate funds. Tentville was created by health seekers in the North First Avenue area, where they lived impecuniously and created a public health problem. Tucson also had many "rest homes" where patients "chased the cure." Today, most of these "rest homes" have disappeared.

When Dr. Jeremiah Metzger came to Tucson in 1911 for his own health, the tuberculous death rate in the United States was 186 for each 100,000 persons; today, it is 9.6 per 100,000. With his sale of the Tucson Hospital, Dr. Metzger retired from medical practice in 1927 at the age of 50 years. However, in 1941 he began eight years of association with the Arizona State Hospital for the Insane, either as its superintendent or chairman of its board of directors. The first grant to Arizona of federal money for mental hygiene work, about $14,000, was secured by him in 1946.

Arizona's change from a Territory to the 48th of the United States will never be forgotten by Dr. C. A. Thomas. As G. W. P. Hunt was being inaugurated as Arizona's first state governor on February 14, 1912, Dr. Thomas was writing answers to the state medical examinations.

He bought the Tucson practice of Dr. I. B. Hamilton in 1912, the purchase including a two-cylinder Oldsmobile. Most of the time the car stayed in a shed, for it was the custom then for patients to send a hired hack to get doctors, the patient paying for the buggy. Chauncey Ainsworth's Livery Stable on North Scott Street operated a wagon ambulance service, which was considered adequate since the city's speed limit was 8 miles an hour.

Dr. Thomas was chairman of the Tucson Chapter of the American Red Cross in 1916 and he became division surgeon for the Southern Pacific in 1919. It was he who urged the company to use the El Paso and Southwestern Railroad's buildings on West Congress for the Southern Pacific Hospital and Sanitorium. He retired in 1948, but in 1950 was awarded a medal and scroll by the Pan-American Congress of Tuberculosis, and in 1954 a certificate of merit from the American College of Chest Physicians.

Another Tucson physician who observed at first hand a Mexican revolution was Dr. S. D. Townsend. Between 1908 and 1912 he was in charge of the Southern Pacific of Mexico's hospitals at Guaymas, Mazatlan and Tepic. He was the physician for three mining companies near Sahuarita in 1912 and the next year became a partner of Dr. Charles A. Schrader in Tucson.

That year Tucson had about 18,000 inhabitants, no paving, wooden porches over the stores, and but few buildings east of Sixth Avenue and Congress Street. Minor and even some major operations were still performed in the patients' homes; hospitals were rarely used for confinements. When a Tucson surgeon did use the hospitals' operating rooms, he furnished his own gloves, instruments and suture materials. Nurses worked 14 to 18 hours a day for $5.

Summer floods periodically swept away the wooden bridge across the Santa Cruz River on West Congress Street, isolating St. Mary's Hospital. Dr. Townsend hastened across the bridge just before it went out in 1915. He attended the hospital patients for four days, but the river was still so high when he returned to Tucson that he rode a mule, keeping his feet near its head.

That year of 1915, Dr. Edward J. Gotthelf, Jr., began his practice of medicine in Tucson. He, with Doctors Huffman, Clyne, Thomas, Metzger and Townsend have the earliest admission dates to the Pima County Medical Society of any Tucson physicians.

Tucson had not lost all its wild and woolly qualities when Dr. Gotthelf became Pima County physician in 1917. He saw the seamy side of the town's life with its rather too frequent murders. Once he was called to Greaterville after a murder, and was fired upon by the criminal, who escaped.

He joined the U.S. Army Medical Corps during World War I and served overseas, receiving a French Legion of Honor citation. He returned to his post as county physician and was among the doctors who, during the 1921 smallpox epidemic, vaccinated 1800 persons at Armory Park one Sunday. He recalls that he gave the first gas anaesthesia and administered the first spinal anaesthesia in Tucson.

The Pima County Medical Society gave its support to the Tucson Health Center, which the American Red Cross sponsored in 1922, and which Miss Minnie C. Benson directed until 1930. It urged Pima County officials to "dust proof" the main roads, and to "devise means to eradicate the hay fever menace." It sought the establishment of a State Board of Health in 1923, as a bill for it was pending in the legislature.

As the years passed, the Society continued to hear medical papers read not only by its members but by outstanding men of this and other nations. It entertained the Southwestern Division of the American College of Surgeons in 1926, at which Dr. George Crile, president of the American College of Surgeons, was the principal speaker.

The first woman doctor admitted to the Society was Dr. Lillis Wood Starr in 1926. The second was Dr. Esther M. Closson, 1929, who was ap-

pointed director of the Tucson-Pima County Health Department in 1954. The third was Dr. Clara Seippel Webster, 1931, who retired in 1953. Today there are 12 women physicians in Tucson.

Evening office hours were not abolished by Society members until 1928, which was the year the Tucson Dental Society was organized. The Society began its study of the Model Basic Science Act, proposed for states by the American Medical Association, in 1927, and in 1933 such an act was passed. However, it was declared unconstitutional and the present Arizona law became effective in 1936.

The U. S. Public Health Service sent Dr. A. N. Crain to Tucson in 1930 to set up the first modern integrated Tucson-Pima County Health Department, the only one in the state which unites its city and county health work. Dr. Lewis H. Howard was its director from 1931 until his retirement in 1954.

The financial depression of the 1930's brought to Tucson doctors increasing numbers of unemployed who were treated without charge. During this period, the Society interested itself in the establishment of a Cancer Clinic, and appointed an advisory committee to the Mother's Birth Control Clinic in 1938. In 1940 the Society approved the idea of hospital insurance.

As these concerns were being handled, World War II spread in Europe and the United States entered the conflict after the 1941 attack of Pearl Harbor. Many members of the Society left for active military duty, and there developed in Tucson not only a shortage of doctors, but of hospital beds.

The past and present shortage of hospital beds may be attributed to Tucson's rapid growth. Its urban population of 58,000 in 1940 has increased to the present estimated 192,000. The available hospital beds in 1954 number 662, but 752 more are needed to care adequately for Tucson's population, it was found by the Pima County Medical Society's committee on hospital buildings.

As the years of this 20th Century have passed, there has been a gradually increasing tendency toward specialization in the practice of medicine. Manifestations of this development have included the creation of the American College of Surgeons, the American College of Physicians, and the growth of medical specalists holding certification by the American Boards in eighteen different fields of medicine.

Members of the Pima County Medical Society have followed this national pattern. Tucson today has a very high percentage of accredited specialists who are members of those Colleges and American Boards, as well as an active and well-trained group of general practitioners.

The growth of Tucson has meant also the enlargement of the membership of the Society and the scope of its activities as well as those of its members. It has increased from the orignial six men, who met that October day of 1904 in Dr. Whitmore's office, to the present 200 active and 26 associate, service and honorary members. The Society is a member of the Arizona Medical Association and a component of the American Medical Association.

The Society rewrote its Constitution and By-laws in 1948 as it was incorporated under Arizona laws as the Pima County Medical Society. In 1949, the Society permitted its physician-secretary to have the part-time assistance of a stenographer to handle the growing volume of administrative duties with which he was charged. That work was done in the secretary's own medical office often at night.

The demands made upon the Society by its members led to the opening of a downtown office at 80 South Stone Avenue on January 1, 1952. Its part-time program and administrative assistant had to be changed to a full-time, daily schedule in August of that year as the lay public also made use of its facilities.

Before this Society office was established and all its records brought together, there was a period when members thought the Society's charter, all its minute books since 1904, and other records were lost. They finally were found in a cardboard box.

The downtown office acts as a clearing house for all the Society's activities. It calls the twenty members of the Board of Directors for their monthly meeting in the office; notifies committee members of sessions, and mails out all announcements. It also maintains a complete membership file.

The Society moves forward at an accelerated pace, typical of this Atomic Age. But whatever the future may hold, the past fifty years of activities of the Pima County Medical Society have demonstrated that its members, individually and collectively, have realized the goals set for them by the Society's six founders. They were:

" . . . to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition; and to enlighten and direct public opinion . . . so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life."

BERNICE COSULICH

WOMAN'S AUXILIARY

The Woman's Auxiliary to the Pima County Medical Society was organized in 1931 by Mrs. C. A. Thomas, who was then State President. The original function was to promote friendship among the wives of Tucson physicians' which in

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turn gave the doctors a better acquaintance with all practicing their profession. Meetings were held at the same time and place as the County Medical Society, and usually the doctors had time for a cup of coffee and perhaps filled in a hand of bridge before final adjournment. The original membership of about fifteen has grown steadily through the years to one hundred and twenty-five. Correspondingly the aims and accomplishments have combined the social and philanthropic aspects into an outstanding group with far reaching influence in the community.

Mrs. V. G. Presson

ANNUAL MEETING SCIENTIFIC SESSIONS

THE 64th Annual Meeting of your Association will be held in Tucson, May 4-7, 1955, with headquarters at El Conquistador Hotel. Through arrangements made by the Scientific Assembly Committee, we are happy to announce participation of the following guest orators who will appear with others on the scientific sessions program.



Walter P. Work, M.D.

Assistant Clinical Professor, Stanford Medical School in the Department of Ear, Nose and Throat; Chief of Ear, Nose and Throat Department of Fort Miley Veteran's Administration Hospital; Member of the staff of the Ear, Nose and Throat Department of St. Luke's Hospital, Garden Hospital and San Francisco City & County Hospital; Consultant in Ear, Nose and Throat Department of Letterman General Hospital and U. S. Marine Hospital; Member, California Medical Association, San Francisco County Medical Society, American Medical Association, American Laryngological, Rhinological and Otological Society, American Laryngological Association, American Academy of Ophthalmology and Otolaryngology, American Otological Society, American Bronchoesophageal Society, American Speech and Hearing Association, Pacific Coast Oto-Ophthalmology Society and Otosclerosis Study Group.

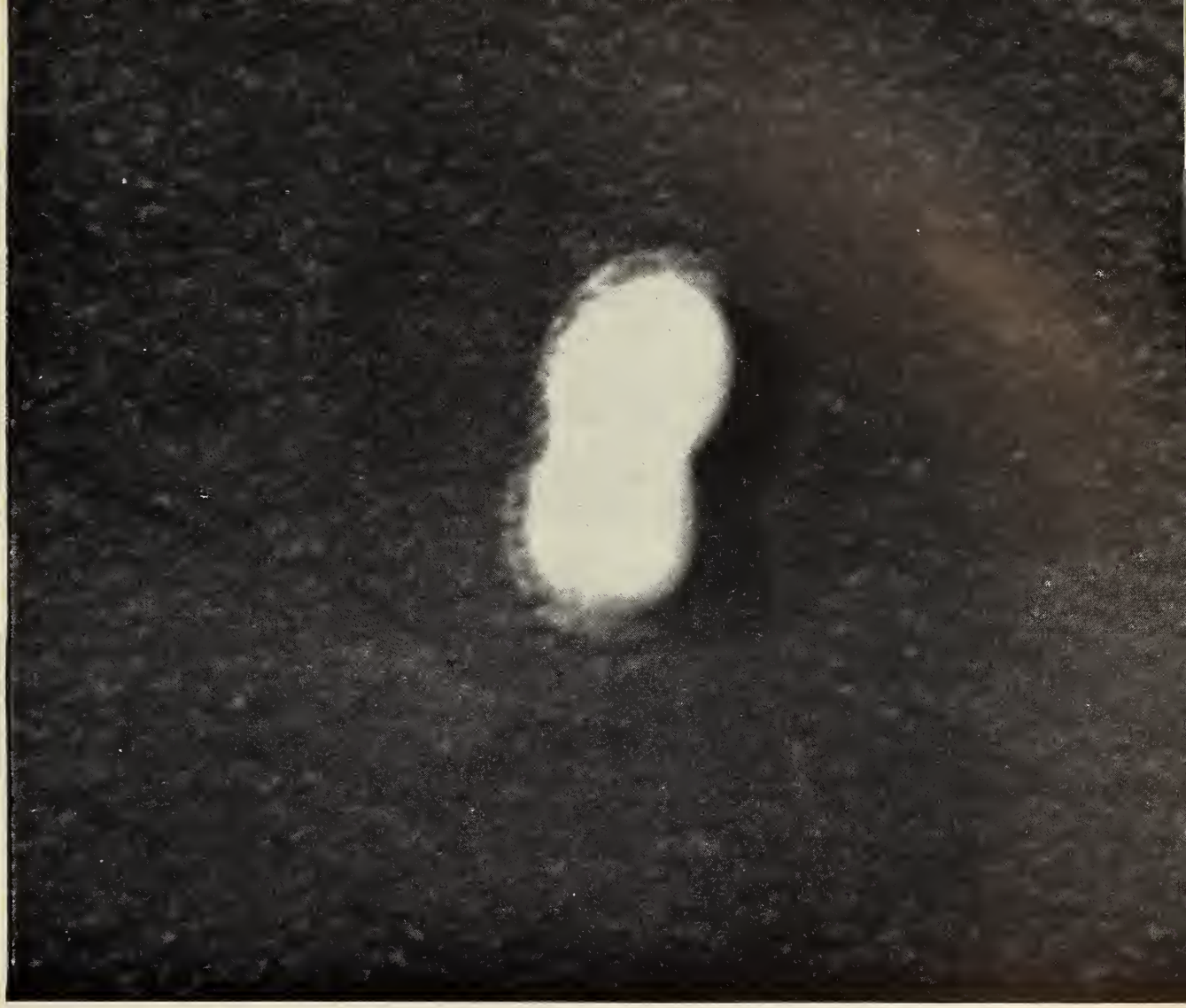


William H. Oatway, Jr., M.D.

Graduate of the University of Wisconsin in 1924, receiving his doctor of medicine degree at the University of Pennsylvania in 1928, Doctor William H. Oatway, Jr., was instructor in pathology, in the University of Wisconsin; had a clinical fellowship at Trudeau Sanatorium in 1929; a residence at Wisconsin General Hospital, Madison; a fellowship at Thorndyke Laboratory at Harvard Medical College, Boston; and a research fellowship with Petroff in the Trudeau Laboratory at Saranac. He entered teaching medicine at the University of Wisconsin when he organized the chest service at the Wisconsin General Hospital for a period of eight years, ending with the rank of Associate Professor of Medicine in 1943; also, physician at Morningside Sanatorium, 1940-43.

Doctor Oatway, Jr., returns to Tucson having begun work at the Desert Sanatorium and in practice with the late Charles Wilson Mills, M.D., in 1943; assisted in the operation of the tuberculosis service at the County Hospital there, a member of the Board and Comstock Children's Hospital; and was on the staff of St. Mary's and Tucson Medical Center. Before leaving Tucson in 1946 he was associated with Doctors Stewart Sanger and Jackman Pyre. Thereafter, he became research staff member at Barlow Sanatorium for three years and Medical Director and Superintendent of LaVina Sanatorium, Altadena, California in 1950 to date.

Diplomate of the American Board of Internal Medicine and in the Subspecialty of Pulmonary Disease, Doctor Oatway, Jr., holds memberships in many local, state and national or-



ELECTRON PHOTOMICROGRAPH

Diplococcus pneumoniae 44,000 X

Diplococcus pneumoniae (Streptococcus pneumoniae) is a Gram-positive organism commonly involved in

lobar—and bronchopneumonia • chronic bronchitis • mastoiditis • sinusitis otitis media • and meningitis.

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ganizations and is the author of over sixty papers on internal medicine and chest diseases, many of which, as you will remember, appeared in Arizona Medicine.



Nevin H. Rupp, M.D.

Receiving his B.S. degree from Franklin Marsh College in 1928 and his M. D. degree from the Univ. of Michigan Medical Sch. in 1933, Doctor Rupp undertook an anesthesiology residency at Flower 5th Ave. Hospital in New York City. He served as Chief of the Department of Anesthesiology in various Air Force hospitals during his tenure in the military service from 1944 to 1946. Doctor Rupp has been Chief of the Department of Anesthesiology, Veterans Administration Center, Wadsworth Hospital, Los Angeles since 1947, and is also serving as Associate Clinical Professor of Surgery (Anesthesiology), U.C.L.A. Medical Center, Los Angeles.

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ANNUAL MEETING
MAY 4, 5, 6, 7, 1955
EL CONQUISTADOR HOTEL
TUCSON, ARIZONA

Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

BRONCHOGENIC CARCINOMA. Ehler, Stranahan and Olson. The New Eng. Journ. of Medicine, Aug. 5, 1954. Among the many articles on this subject, this one from the Department of Thoracic Surgery of the Albany Medical College, deserves special attention. It is a study of 517 cases over a period of fifteen years (1936 to 1951). The cases are reviewed and classified according to histology, with squamous cell carcinoma the most common form. 93% were males and 7% females. Operative mortality was 17.8 per cent for the whole series, but only 7.1 per cent in the last two years of the series. (Two things are striking in this article; the limited value assigned to x-ray examinations, and no mention of smoking as a cause!)

PULMONARY FUNCTION TESTS. Paul Heller, The Neb. State Med. Journ., August, 1954. This author presents the basic facts of pulmonary function and its measurement. Emphasis is placed on simple pulmonary function tests, because of their easy availability and great usefulness to the clinician. He discusses vital capacity, residual volume, maximal breathing capacity, vital capacity measurements, and other tests.

NONBONY LESIONS ABOUT THE WRIST. By L. S. Hughsmith, M.D., Spokane. Western Journ. of S.G. & O., August. Quoting abstract at beginning of this excellent article: "Four not too uncommon nonbony but strictly operative lesions about the wrist are described: (1) ganglion cyst; (2) tuberculous tenosynovitis; (3) stenosing tenovaginitis (deQuervain's disease); and (4) attrition neoroma or spontaneous compression neuroma of the median nerve. Each lesion is individually discussed as to its etiology and the specific pathology resulting. A simple operative procedure in each case is outlined for each, the procedure being quite anatomic with excellent results being expected if the condition is but recognized and properly treated."

CORTISONE IN ALLERGIC DISEASE. Burrage and Irwin, Rhode Island Med. Journ., July, 1954. Cortisone and hydrocortisone have proved effective in relieving symptoms of allergic diseases, but they do not alter either antigens or antibodies. The general principles governing the use of these remedies are set forth in a table: (1) Do not employ Cortisone and Hydrocortisone as a substitute for established investigative procedures in allergy. (2) Never use these hormones if older routine measures promise success. (3) Always tell the patient they only suppress symptoms. (4) Always inform the patient that these hormones may cause undesirable effects but that close cooperation and supervision can lessen the chances of their appearance. (5) If symptoms appear to threaten life and if Cortisone or Hydrocortisone therapy is to be given a trial, act promptly. (6) Do not depend upon these agents alone if other measures can help and they usually can. The absolute contraindications include active tuberculosis, gastro-intestinal bleeding, diabetes, psychosis and thromboembolic phenomena.

THE ADMINISTRATION'S HEALTH PROGRAM AND THE AMERICAN MEDICAL ASSOCIATION. For a brief and clear statement of the AMA position with relation to the Administration's health program, this article by Frank E. Wilson, Director of the Washington Office of the AMA, is recommended. It is in Rhode Island Medical Journal for July, 1954.

RHEUMATIC DISEASES, — Occupational Aspects. This is a review, with a bibliography of 63 articles in medical literature. It is by Mintz and Goldwater, of the Division of Occupational Medicine, School of Public Health, Columbia University. Industrial Medicine & Surgery, August, 1954.

"It has long been recognized that the rheumatic diseases are an important cause of disability in the industrial population and as such constitute a problem in occupational medicine." There are shortcomings in our existing knowledge, confusion in terminology and criteria, differences in methods of collecting data and lack of relevant information. In spite of these deficiencies, certain findings are possible: (1) The rheumatic diseases constitute a significant morbidity problem. (2) Most individuals affected by these diseases can continue to work, with suitable adjustments. (3) Certain occupational factors appear to be associated with an excessive incidence of arthritis and rheumatism.

POLIOMYELITIS. Illinois Med. Journ., July, 1954. Three timely articles on this always interesting topic. Leonard M. Schuman writes on the "Evaluation of Gamma Globulin; Henry M. Humm writes on the "Present Status of Vaccines," and H. J. Shaughnessy writes on "Recent Advances in Vaccines." A good change to get up to date on the subject of poliomyelitis prevention.

TUMORS OF THE BREAST. Medical Times, August, 1954. "This summarization attempts to cover the essential information on the subject, including therapy, and is designed as a time saving refresher for the busy practitioner." This introductory statement gives the purpose of this article. It is well illustrated by drawings. The August article is devoted to diagnosis and in September the treatment will be reviewed. This review summary is beamed at general practicitioners.

Organization Page

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

HIPPOCRATIC OATH

I swear by Apollo the physician, by Aesculapius, Hygeia, and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgment the following Oath:

To consider dear to me as my parent him who taught me this art; to live in common with him and if necessary to share my goods with him; to look upon his children as my own brothers, to teach them this art if they so desire without fee or written promise; to impart to my sons and the sons of the master who taught me and the disciples who have enrolled themselves and have agreed to the rules of the profession, but to these alone, the precepts of the instruction.

I will prescribe regimen for the good of my patient according to my ability and my judgment and never do harm to anyone. To please no one will I prescribe a deadly drug, nor give advice which may cause his death. Nor will I give a woman a pessary to procure abortion. But I will preserve the purity of my life and my art. I will not cut for stone, even for patients in whom the disease is manifest; I will leave this operation to be performed by practitioners. In every house where I come I will enter only for the good of my patient, keep myself far from all intentional ill-doing and all seduction, and especially from the pleasures of love with women or with men, be they free or slaves.

All that may come to my knowledge in the exercise of my profession or outside of my profession or in daily commerce with men, which ought not to be spread abroad, I will keep secret and will never reveal. If I keep this Oath faithfully, may I enjoy my life and practice my art, respected by all men and in all times; but if I swerve from it or violate it, may the reverse be my lot.

This is presented here because it is the season when high school students in social studies courses ask the physician for a copy of his oath.

FLORENCE CRITTENTON HOME, 1022 E. Garfield, Phoenix, Arizona.

The Florence Crittenton Home movement was started over 50 years ago by a New York merchant named Charles N. Crittenton. His original idea was to provide shelter and rehabilitation for wayward girls and their babies. He named the Home established for them after his daughter, Florence, who died at the age of four years from an attack of scarlet fever. Since the 1880's there have been more than 50 of these homes established in the United States.

The Phoenix, Arizona, Florence Crittenton Home was established in 1896 and the original Home dedicated on June 24, 1898. At first it served both delinquent girls and unmarried mothers. Later this was changed to care for unmarried mothers only. Its purpose is to give not only care and protection to unwed mothers but to educate and rehabilitate them for a more satisfying and acceptable life after they leave the Home.

In 1954 a beautiful new Home was built in Phoenix which will house expectant mothers and later their babies. This new building was made possible by the generous support of many individuals and organizations throughout the state. It is now possible to more adequately fulfill the purpose and function of the Home in rehabilitating the girls as well as giving prenatal, delivery, and post-natal care. The program includes classes in sewing, cooking, personal grooming, child care, home nursing, typing, music, art and various other arts and crafts. Other school subjects are taken by correspondence from the local high school. Church services and bible study are provided weekly for both the Catholic and the Protestant girls.

Unwed expectant mothers may enter the home as early as the fourth or fifth month of pregnancy and stay for a minimum of three weeks after delivery. Fees are $95 a month and may be arranged on a time payment plan. The mothers may keep their babies and take them

home with them or may have them placed for adoption through the local Arizona licensed child placing agencies.

There are many charity cases, those girls who can't pay and those who can pay in part, as well as those who only hope to pay. The Arizona Florence Crittenton Home receives state-wide support as well as being a Phoenix Red Feather Agency.

* * *

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, INC., 120 Broadway, New York 5, N.Y.

The National Foundation for Infantile Paralysis began its program in 1938. More than $42,500,000 has been expended since that time for scientific research, professional education of doctors, nurses, physical therapists, and other specialized persons needed in the care and rehabilitation of persons crippled not only by polio but also by other diseases and accidents.

In that same period of time the total net receipts contributed by Arizonans to the March of Dimes was $1,994,972.24. Of the amount contributed in this state, 70 per cent remained or was turned over to the state for care of polio patients. In the past seventeen years, therefore, Arizona has contributed an average of $35,200 a year or a total of $599,104.71 to the national cause of scientific research and professional education in poliomyelitis.

A total of twenty-one National Foundation fellowships and scholarships have been awarded to residents of Arizona to date, including fourteen for physical therapists, two for medical social workers, and one each to a public health physician, a medical student doing research, an orthopedic nurse, a health educator, and a post-graduate physical therapist.

In 1954 the National Headquarters office for the National Foundation for Infantile Paralysis advanced $116,000 to four of the fourteen local chapters in the state of Arizona. This brought to nearly $500,000 the national advances to Arizona since 1946 (does this mean that Arizona's net contribution to the National Foundation has been $99,104.71 in these seventeen years or only five per cent?)

In 1954 alone the National Foundation grants for scientific research were over $2,500,000, and for professional education $3,300,000. This does not include $7,500,000 appropriated for the field testing of the Salk polio vaccine. Though there is not yet any way of determining how, when, or why, an epidemic of paralytic poliomyelitis will strike a given community; and though we do not yet know that the Salk vaccine is effective in preventing paralytic poliomyelitis, this information may come this spring. An independent polio vaccine evaluation is in process at the University of Michigan under the direction of Dr. Thomas Francis, Jr., of the 1954 field test. There is good reason to hope that a vaccine to prevent paralytic poliomyelitis will soon be available.

Physicians in Arizona as well as in every other state in the nation have benefitted in their knowledge and skill in the treatment of poliomyelitis and other virus diseases as a result of the enormous funds for scientific research and professional education that have been funnelled through the National Foundation for Infantile Paralysis. The National Foundation and its fourteen chapters in the state of Arizona stand by ready to help the patient in need through recognized and accredited hospitals and physicians.

And now for 1955, through the National Foundation more services for the care and treatment of poliomyelitis patients in Arizona are available this year than ever before. This includes payment of hospital bills and expenses for braces and appliances, transportation and home nursing of patients; epidemic aid services, including nurses, physical therapists, medical social workers, resident physicians and medical consultants. Emergency equipment is in readiness for outlying areas or local catastrophe, iron lungs, chest respirators, rocking beds are available on a few hours notice (by air, if necessary) from nine strategically located supply depots in the United States. Institutes and in-service training programs for professional personnel; fellowships and scholarships; the services of PEV's (Polio Emergency Volunteers); publications, and films are ready, as well as exhibits providing the public, patients, parents and professional personnel with the facts about poliomyelitis.

This spring, 1955, the National Foundation will supply the Salk polio vaccine, **if licensed for use,** without charge to the Arizona State Health Department in quantity sufficient to provide three immunizing doses to every one of the approximately 35,000 children in the first and second grades of every public, private

and parochial school in every county in the state.

Arizona physicians can take justifiable pride in their financial and service contributions to this achievement.

* * *

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, INC., 111 East Willetta, Phoenix, Arizona.

As the first fifty years of the voluntary agency's fight against tuberculosis draws to a close and we face the challenges of the future, we pause to take stock. In 1904 the National Tuberculosis Association came into being as the result of the recommendations of a group of fifteen physicians. Its first president, the late Edward Livingston Trudeau, M.D., in his address at the first annual meeting, outlined in broad yet specific terms, the Association's function — to educate the individuals and through them the state, as to the nature of tuberculosis, so that appropriation would be made and laws enacted that would not only control, but eventually eradicate the disease.

"Moneys raised from the sale of Christmas Seals are trust funds. We have an obligation to spend them not only carefully, but for the purpose for which they are raised; namely, to carry forward a vigorous campaign against tuberculosis.

"The program of a tuberculosis association has as its objective the education of the individual and of the community to the end that tuberculosis may be prevented and adequate provision be made available for diagnosis, treatment, and rehabilitation of the tuberculous. Many years of experience in the work of tuberculosis prevention have proved that Christmas seal funds can be used most effectively in this way, thereby accomplishing the greatest good for the greatest number. Christmas Seal funds are inadequate for the relief of the tuberculous or for the permanent support of hospitals, diagnostic clinics, nursing programs, and similar activities."

* * *

ARIZONA SOCIETY FOR THE BRAIN INJURED, INC., 1510 East Camelback, Phoenix, Arizona.

The Arizona Society for the Brain Injured was organized in 1953 because of the obvious lack of facilities for the brain injured and mentally retarded children in the state of Arizona. At the time of the formation of the Society, April 1953, there were an estimated 10,000 brain injured and mentally retarded in Arizona; there were facilities for 400 of these. It was only natural that active, well educated, and well adjusted parents of some of these neglected children should get together to attempt to provide something besides "hiding in closets for their children."

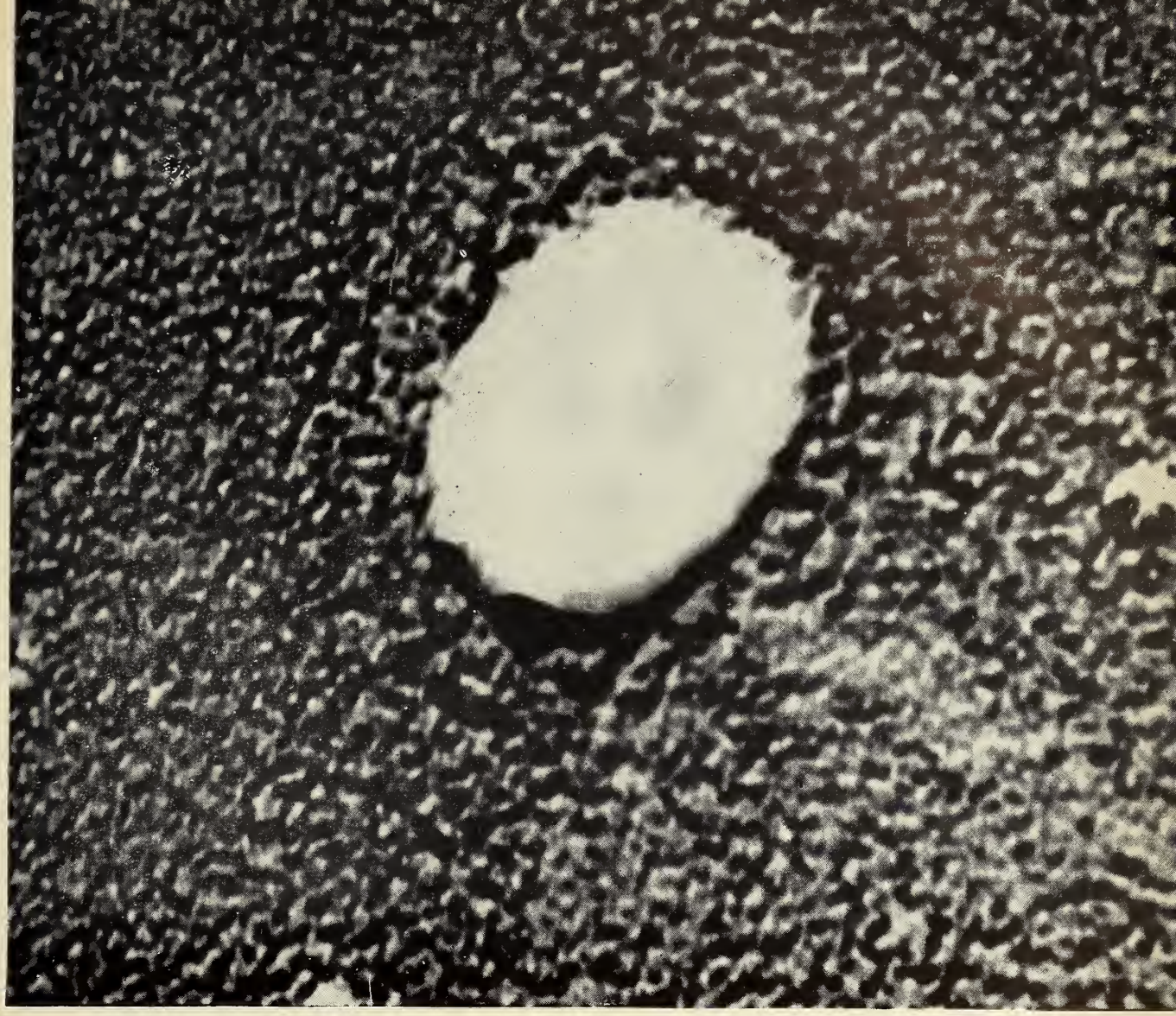
Since April 1953, the facilities in Arizona have expanded to provide care for 800 of these children. That leaves us with 9,200 brain injured and mentally retarded children at this date, February 1955, who receive no assistance. It is the purpose of the Arizona Society for the Brain Injured to develop an active program for these 9,200 children.

In its short lifetime, the Society has organized social classes for some 30 children in the Phoenix area. These classes are held in space donated by the Jewish Community Center. Because of lack of funds all the teachers at this time are volunteers who receive professional supervision and guidance as well as regular training in the specific problems of the brain injured.

Because of their interest in their children's disabilities, the parents have formed two groups of their own. The first is a Parents' Association, affiliated with the Society, whose purpose is to assist the Society in every possible way to expand and grow so that more children may be helped. The other is a Parent Study Group which meets regularly and studies under professional guidance the individual problems and deviations of brain injured and mentally retarded children.

The Arizona Society for the Brain Injured concerns itself with the 800 children and the families of these children who are at present recognized and under care in existing facilities, and has emphasized the need for cooperation between existing agencies which affect the children under its care. Group parties for the children, general meetings for the parents on topics of mutual interest, agency cooperation on individual cases, have all been carried out cooperatively and successfully. This inter-agency cooperation is considered a vital part of the Society's over-all plan.

For 1955-56, the Arizona Society for the Brain Injured plans an expanded program to reach a larger number of families in the state who are affected by this not inconsiderable prob-



ELECTRON PHOTOMICROGRAPH

Shigella dysenteriae 42,000 X

Shigella dysenteriae (Shiga's bacillus) is a
Gram-negative organism which causes

bacillary dysentery.

It is another of the more than 30 organisms susceptible to

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lem. The budget for the coming year is geared to two areas. The first area of emphasis is that of special individual assistance to children in and around Phoenix. This includes a Day School Program for the children to provide academic instruction as far as each child is capable, instruction in the industrial virtues, vocational training, planning and placement insofar as is possible, and parent guidance and instruction. The Perry Institute for Brain Injuries will be built on the Society's property at 32nd Street and Thomas Road within the coming year. This institute will include class rooms, therapy rooms, a medical clinic, a habilitation unit, and other specialized facilities for training the brain injured and mentally retarded. The second area of emphasis is case-finding throughout Arizona to discover the individual needs and problems of each child and his family who fall within the range of assistance of the Society. On the basis of these findings, to then set up geographically strategic program centers to provide the help that is indicated.

The Society's program was necessarily started in Phoenix, but all of Arizona's brain injured children, unfortunately, do not reside in Phoenix, so the program must extend itself to cover the entire state. This expansion will take place in the very near future because of the extremely pressing need and the retardation of progress toward habilitation of these children in the state of Arizona. Public awarness of this problem and public recognition of the fact that Arizona is so many years behind other states in its programming must be affected by the Society in the immediate future.

This, then is the projected 1955-56 program of the Arizona Society for the Brain Injured. It should be obvious that the volunteer dollar which goes into the program is utilized to its extreme benefit for the assistance of Arizona's brain injured and mentally retarded. The budget has been small and has provided assistance for a large number of families who had been unable heretofore to receive any assistance at all. It is felt that through this aid to the families, through using the volunteer dollar judicially and with careful preliminary planning, the families of brain injured and mentally retarded children, as well as the children themselves, may be assisted to face their own problems, to escape from becoming state charges and to become effective, functioning, and contributing citizens of Arizona.

The Society will have its first fund raising campaign from the 24th of February through the 9th of March. Since your article is about the volunteer dollar, it is most timely for us.

Thanks, doctors and doctors' families for your interest.

THE AMERICAN GOITER ASSOCIATION

This meeting will be held in the Skirvin Hotel. Oklahoma City, Oklahoma, April 28, 29 and 30, 1955.

The program for the three day meeting will consist of papers and discussions dealing with the physiology and diseases of the thyroid gland.

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Notes from the EDITORS PEN

MORE MEN THAN WOMEN ARE HOSPITALIZED

A nationwide survey shows that more men are hospitalized than women. This is true despite the fact that one-sixth of all persons admitted to hospitals in one year were pregnant women.

On one day in 1953 there were 1,206,592 persons in 6,539 of the nation's 6,840 registered hospitals. This included 642,156 men and 564,436 women — or 77,720 more men. Dr. Frank G. Dickinson, director of the AMA bureau of medical economic research, said the higher hospitalization rates of males "strongly implies that they are the sicklier and more hospitalied sex."

A breakdown of the totals showed that even in the childbearing years of life, between 15 and 44, men exceeded women in hospitals by 13,000. At ages 45-64 the excess was over 51,000, but after 65 it dropped to 2,000. Surveys of accidents and occupational diseases might shed more light on the difference but the latter would hardly explain why there were 11,300 more males than females under 15 years old in hospitals.

One of the major factors in the difference was found in a breakdown of patients in hospitals under various types of controls. There were 98,605 more males than females in VA hospitals and also more men than women in other federal hospitals. However, in general non-governmental hospitals, women exceeded men by 64,631. In state hospitals, which accounted for slightly less than half of all patients, the number of males and females was practically the same — 277,546 and 277,270.

DOCTOR DRAFT LAW EXTENSION

Possibly one of the most controversial matters to come before Congress this year will be the extension or renewal of the Doctor Draft Law which expires June 30. AMA says renewal is not necessary. The Armed Services Chiefs may be expected to exert pressure for its extension. Medical benefits for servicemen's dependents and final decision as to the number of men to be maintained in uniform may well affect the outcome.

25th ANNIVERSARY — BLUE CROSS

It's hard to believe at times. We mean that Blue Cross is in long pants and 25 years of age. It seems like only yesterday (or was it Tuesday?) that Blue Cross and Marilyn Monroe were both unheard of. Today both have millions of loyal followers, although Marilyn does attract more members of the crew-cut crowd.

During those 25 years of growing up, many things have happened. People have come to realize the importance of providing for good health care through the medium of prepayment plans. Thus, while they are well, they are building up a bank account to help them pay a hospital or surgical bill when an accident befalls them, or when they need medical care. This planning is an integral part of our current economy. Thus, when they are hospitalized, they can turn the bills over to Blue Cross-Blue Shield, and let that organization do the bill-paying chores for them in the main.

As the method of prepayment has expanded and improved, so have medical and hospital facilities. People are actually living nearly 25 years longer with less pain and suffering than they were in 1900. How many more years can be tacked onto a life is highly speculative at this point. But it seems that the surface has only been scratched. New medical techniques; improved medical equipment; new drugs, new discoveries in the treatment of cancer, polio and the other once incurable diseases, to name a few, are constantly being introduced.

All these are the results of careful research and diligent work. The probing goes on all the time. The answers that are being obtained to help solve our medical problems are not easy answers. But each in its own right is an important answer, for in some isolated way it may eventually solve one of our most baffling problems in medical science. Once we have obtained most of the answers to our current medical problems, who knows? When a person reaches 65 he may be just middle-aged. And an energetic youngster of 50 will be leading the American League in batting for the 12th straight year.

It's all plausible. It could change our whole pattern of living . . . and dying. Young couples in their middle forties could be thinking seriously of marriage and a cottage — full of babies.

And retirement would be justly deserved when an old codger of 110 decided to relinquish the reigns down at the bank and spend his time golfing and clipping coupons.

And we at Blue Cross-Blue Shield would think nothing, absolutely nothing, of paying for maternity care on a young mother at the pleasant and early age of where life now supposedly begins . . . 40.

All this will play havoc with our experience and utilization tables. But that's the way things are when progress progresses.

THE FEDERAL BUDGET FOR 1956

Interesting statistics and comments compiled by the Council of State Chambers of Commerce.

A Five-Year Picture in Brief

	1952	1953	1954	1955	1956
New Spending		(Billions)			
Authority	$91.4	$80.3	$62.8	$57.3	$58.6
Expenditures	65.4	74.3	67.8	63.5	62.4
Receipt	61.4	64.8	64.7	59.0	60.0
Deficit	4.0	9.4	3.1	4.5	2.4
Public debt at End of Year	259.1	266.1	271.3	274.3	276.0
Unexpended Approp. End of Year	68.8	78.4	68.0	53.9	49.6

BLUE SHIELD MEETINGS

A series of eighteen meetings with medical secretaries has just been concluded. These meetings were held throughout the state in conjunction with the various county medical societies.

The meetings were conducted to explain the workings of Blue Shield (and Blue Cross) to the girls, to give them the philosophy and background of the plans, to discuss contracts and benefits and to bring them up to date on contemplated additions to the contract.

According to members of the Professional Relations Division, it was estimated that over one third of the over 700 Blue Shield Participating Physicians was represented at the 18 get-togethers. Robert Rinehart, public relations manager for Blue Cross-Blue Shield, was in charge of the meetings. Paul Lauerman, case supervisor, assisted.

WORLD MEDICAL ASSOCIATION

Ninth General Assembly of the World Medical Association will be held in Vienna, September 20 through 26 this year. Rounds Travel Service, 52 Vanderbilt Avenue, New York 17, New York will make transportation reservations for you.



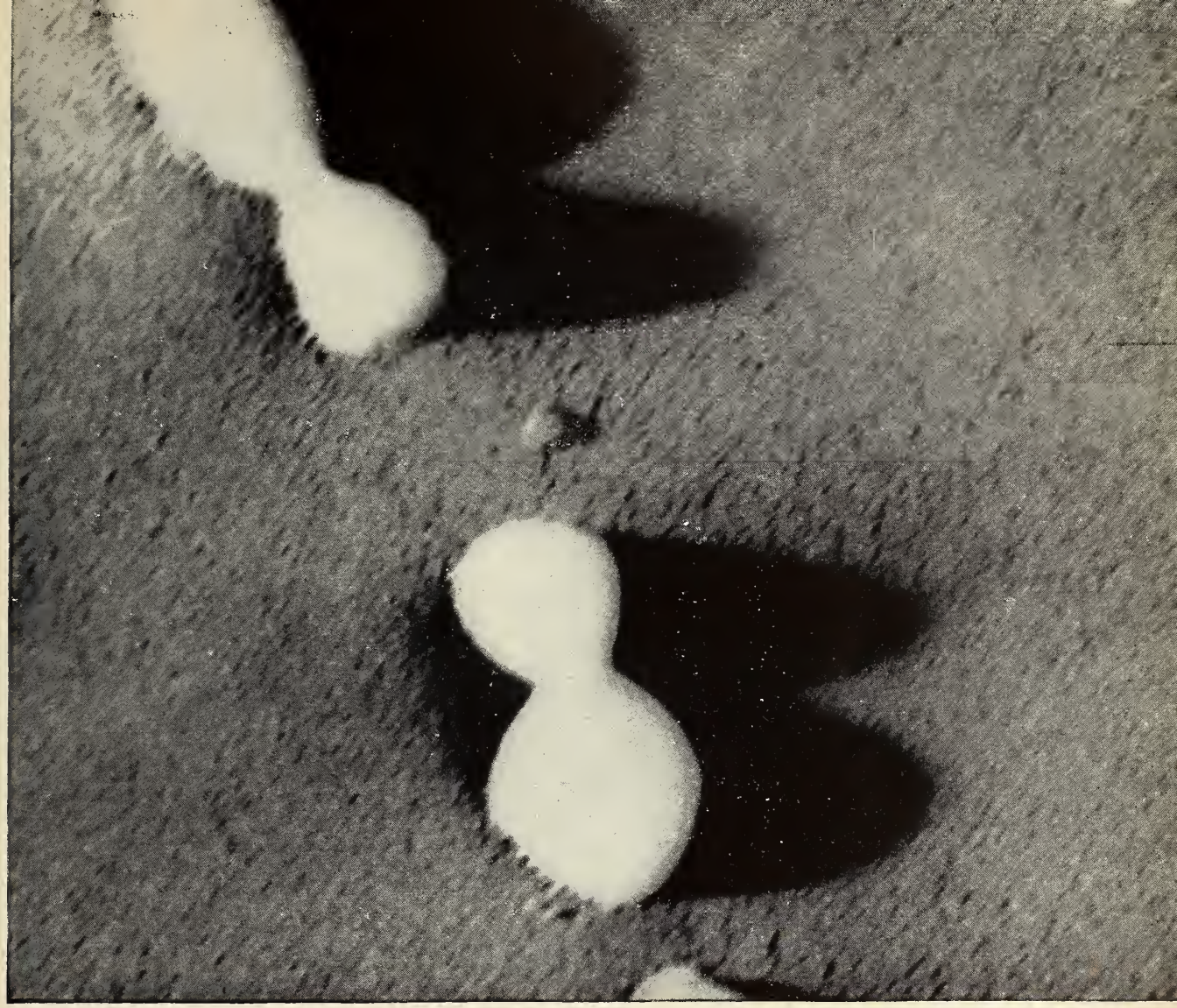
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ELECTRON PHOTOMICROGRAPH

Streptococcus pyogenes 36,000 X

Streptococcus pyogenes is a Gram-positive organism commonly involved in a great variety of pathologic conditions, including

scarlet fever • tonsillitis • pharyngitis • otitis media • sinusitis
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mastoiditis • vaginitis • rheumatic fever • acute glomerulonephritis

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ARIZONA Pharmaceutical PAGE

THE SAME OLD STORY

Joseph A. Zapotocky, Ph.D.,
Tucson, Arizona

IF WE make an effort to trace the beginnings of medicine and pharmacy back to ancient civilization, we find that there probably were always physicians and pharmacists of some sort. The prestige of each group varied during different periods and the boundaries of each profession overlapped from time to time. This, in turn, led to typical charges and countercharges by the members of both professions. Pharmacy and medicine were recognized as separate fields even in ancient times, and as early as the eleventh century laws were established to separate pharmacy and medicine. We can trace some of our present problems as far back as the origin of our professions.

It is not uncommon to find evidence in the literature that the populace accused us of giving and taking percentages on prescriptions. Even in the middle ages, graduates of schools of medicine were required to take an oath that they would not accept "kick-backs" or percentages on prescriptions. Chaucer's description of the physician in his "Canterbury Tales" alludes to this unethical practice.

The competition between grocer and pharmacist is also not new. The pharmacists of Nuremburg in 1581 explained their plight as follows: "The sale of all confections, formerly dispensed by us, has now fallen into the hands of the sugar dealer. Counter sales are now made by all the large spice and cheap grocery shops, thus robbing the druggist of a source of profit that he is justly entitled to. All distilled waters, oils, and the like, which were formerly kept by druggists only, are now indiscriminately sold by any ignoramus who imagines himself qualified to engage in this traffic." The German pharmacists also placed part of the blame for the loss of patronage on the physician. "They, for instance, prescribe in German, so that any barber or old woman can prepare the medicine, and the druggist is ignored."

Each year newer drugs cause many older remedies on the pharmacy shelf to pass into oblivion. The modern pharmacist is constantly on the alert for changing therapeutic trends so that he will not be left with a large stock of medicinals which are no longer prescribed. Our sixteenth century pharmacist evidently had the same complaint for he writes, "Now, many expensive medicamenta are, every year, carried over and deteriorate, because the doctors do not prescribe them, and they prove a total loss to the druggist. Of such medicines we will but enumerate the fruit juices, the purging elixir of roses, etc."

Most of our modern pharmacies are divided into two sections. In one section the strictly professional work is done and in the other household remedies, cosmetics, sundries, etc., are sold. An English apothecary of the sixteenth century writes of the practice of pharmacy by the apothecary, "He must have two places in his shop, one most clean for physic and the base place for chirurgic stuff."

Substitution and counterprescribing were recognized centuries ago. An oath required of pharmacists in early France was in part, " . . . to execute accurately their prescriptions, without adding or diminishing anything contained in them, that they may in every respect be prepared 'secundem artem.' Never to use any succedaneum or substitute without the advice of others wiser than myself."

Dispensing physicians come in for their share of criticism as early as the eleventh century. German pharmacists of the sixteenth century lament that, "Unguenta and Emplastra, which certainly belong to the exclusive field of pharmacy, are now dispensed by barbers and*** physicians, who are neither justified by precedent nor by qualification to handle these things."

Some of the present day problems of professional relations between pharmacist and physician are really centuries old. Whether we can ever hope to correct them and eliminate them completely is improbable. A new group of physicians and pharmacists enter our ranks each generation and there will always be a minority in each group who find it advantageous to interpret our professional codes to suit themselves.

Woman's AUXILIARY

25th Annual Convention of the Woman's Auxiliary to the Arizona Medical Association, Inc.



Mrs. Brick P. Storts, Jr.
President



Mrs. Hiram Cochran,
Convention Chairman

TO All Wives of Doctors:

It is my happy privilege to welcome you to the Twenty-Fifth Annual Convention of the Woman's Auxiliary to the Arizona Medical Association.

This meeting will be held in Tucson at the same time as the Arizona Medical Association, May 4-7. Registration will be at the El Conquistador Hotel. Our very honored guest will be Mrs. George Turner of El Paso, Texas. Mrs. Turner is president of the National Auxiliary to the American Medical Association. You are cordially invited to attend the luncheon, May 6 and brunch, May 7.

Mrs. Hiram Cochran, Convention Chairman, and her committee members are anxious to have your visit to Tucson an enjoyable one.

I will look forward to greeting you personally.

Mrs. B. P. Storts, Jr. President

PROGRAM

THURSDAY, MAY 5

10:00 a.m. to 4:00 p.m. Registration.

10:00 a.m. Student Nurse Loan Committee meeting. Chairman, Mrs. Donald Polson, Phoenix.

10:00 a.m. Nominating Committee meeting. Chairman, Mrs. Wm. Schoffman, Phoenix.

12:30 p.m. Board of Directors luncheon and meeting.

3:00 p.m. School of Instruction for county presidents, presidents-elect, and chairmen. Chairman, Mrs. John Kloby, Yuma.

FRIDAY, MAY 6

10:00 a.m. Registration

12:00 p.m. Luncheon—Turf Room, Rillito Pk.

1:30 p.m. Formal Opening Session
Guest speaker—Mrs. George Turner, National Auxiliary President

SATURDAY, MAY 7

10:30 a.m. Brunch—Lodge on the Desert
Style Show

12:00 p.m. General Session
Installation of New Officers by Mrs. Turner

1:00 p.m. Board of Directors meeting.

6:00 p.m. Social Hour preceding President's Dinner Dance.

AMERICAN MEDICAL EDUCATION FOUNDATION

WE have every reason to be proud of the record of continual progress in the field of medicine in this country. Our health standards are the highest in the world and advances in every field of medicine are phenomenal. It seems certain that we are about to see even greater miracles in the near future.

These great possibilities are dependent upon our country continuing to have the best possible training for our doctors. President Eisenhower says that the keystone to our national health lies in the 79 medical schools approved by the American Medical Association. We must constantly have an increasing number of well trained men in public health, research, and every field of medical care if our country is to continue its progress.

However, there is reason for great concern for the medical education in the United States because of the failure to provide adequate funds for our medical schools. It now costs $10,000 to $12,000 for a medical education. This means an annual minimum of $10,000,000 is essential if our medical training program is kept at its present high standard. Tuition to these schools has increased 165 per cent since 1940, but this pays only about one-fifth of the actual cost of the medical education provided by these schools. The remainder comes from state appropriations, grants from federal agencies, gifts and alumni funds. We are faced with the decision of lowering the standard of medical education or finding ways of supplying more money to support the schools. To lower our standards would be a disaster. Increased funds must come from private sources or from Federal aid. In order to preserve the freedom of education, the American Medical Education Foundation was organized so that private financial support might be utilized.

All funds raised by the A.M.E.F. are combined with those of the National Fund for Medical Education, given through American industry, into one central fund. This financial aid is a gift for distribution among all medical schools, preventing separate fund-raising campaigns as well as unequal distribution of funds. This money is given to the 79 medical schools for unrestricted use in their training programs. Gifts specified for particular schools go to those institutions without affecting the money allocated them by the national fund.

The medical profession has accomplished much in striving to raise these funds. Last year the gifts from the doctors amounted to more than a million and a quarter dollars and the medical auxiliaries contributed $50,000. This year the foundation hopes to raise $2,000,000. This goal is high, but it is worth all our efforts.

This is one of the newest projects of the medical Auxiliary, but it is also one of the most important. Personally, we owe much to medical education. Individually and cooperatively, we have an obligation to promote and support this great project in every possible way.

Mrs. R. Lee Foster
State A.M.E.F. Chairman

TODAY'S HEALTH

WE are living in a health conscious era. The public is bombarded with information. Colorful promises on the one hand, and scientific truths on the other. It comes to us on radio, television, movies, bill boards, pictures, the printed and spoken word.

Every one of us must learn to evaluate these sources to achieve a healthful and enriched living.

If we achieve our goal that all may have the opportunity to read the right kind of material, we must show our friends and neighbors the authentic health magazine, TODAY'S HEALTH.

We have placed our magazine in Doctors' and Dentists' offices as well as other public offices by gifts from individuals also as a gift from the American Medical Association. Many schools use it for reference in health classes. This is all fine—but it is not enough. It is vitally necessary at this time to place more positive health education in the hands of all. Have you as a Doctor's wife told your friends and neighbors about Today's Health? Have you loaned your copy? Have you ask your beauty shop to use your copy as an experiment to see if the public will call for it month after month? Or have you given a gift subscription to some relative or friend? New mothers are interested in the right way to bring up that new baby. How about a gift to her? All these are but a few ways to acquaint more people with our aim of positive health education. We as doctors' wives are always being called on for service in other



ELECTRON PHOTOMICROGRAPH

Hemophilus influenzae 64,000 X

Hemophilus influenzae ("influenza bacillus") is a Gram-negative organism which grows only in the presence of hemoglobin. Contrary to its name, it is not the causative agent in influenza, but rather is commonly involved in

meningitis • chronic bronchitis • bronchiolitis
tracheobronchitis • supraglottic laryngitis • bronchopneumonia

It is another of the more than 30 organisms susceptible to

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organizations. There we can give many who otherwise might never hear of Today's Health, a look at good authentic medical material.

Many people delight in quoting from some article they have read — giving advice on any and all kinds of treatment for every known disease. How much better they have the "real" truth, which only Today's Health can give. Because, it is the only magazine on health for the general public, these people should have the opportunity to get acquainted with the best.

We in Arizona have the distinction of winning first prize in the National Contest of 1953-54. This prize money of $40.00 was turned over to your State Chairman to send gift subscriptions to missionaries in foreign countries, especially those behind the iron and bamboo curtains. I have ask the county chairmen to send me names of missionaries who would use the magazine and pass it on to others. I can accept a few more names if anyone cares to send them to me before April 1st.

The contest is fun and creates enthusiasm, the main object of this project is to place positive health education in the hands of the public through Today's Health. Let us not forget this.

Mrs. James Soderstrum
Whipple, Arizona

ANNUAL OTOLARYNGOLOGIC ASSEMBLY

The Department of Otolaryngology, University of Illinois College of Medicine, announces its Annual Assembly in Otolaryngology from September 19 through October 1, 1955. This Assembly will consist of two parts.

Part I. September 19 through September 24, 1955, will be devoted to surgical anatomy of the head and neck, fundamental principles of neck surgery and histopathology of the ear, nose and throat. This week will be under the personal direction of Maurice F. Snitman, M.D.

Part II. September 26 through October 1, 1955, will be devoted entirely to lectures and panel discussion of advancements in otolaryngology. The chairman of this section will be Emanuel M. Skolnik, M.D.

Registration is optional for one or both weeks.

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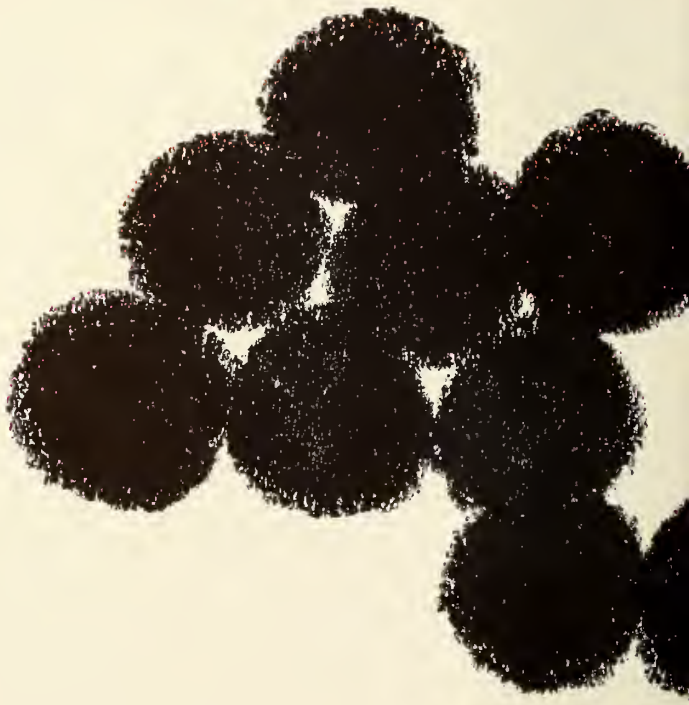
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DUODENAL ULCER: PREJUDICES REGARDING SURGICAL TREATMENT

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HESE prejudices and reflections represent those impressions gained during the past 20 years and are part of the satisfaction derived from, as well as at times the anguish associated with approximately 1,000 gastric resections.

Indications for Surgery

The surgeon seldom sees a patient who has not had a reasonable trial of medical treatment. The usual criteria of perforation, hemorrhage and obstruction are too well established to be dwelt upon. The indication of intractability is subject to a good deal of variable interpretation. The surgeon is willing to subject the patient to a certain more or less predictable risk in an effort to achieve relief of symptoms.

A patient with duodenal ulcer of any duration can hardly be expected to respond to medical treatment when his occupation consists of something like driving a bus or streetcar in the intricacies of modern traffic and at the same time is expected to make change, and handle the general public when it is weary, irritable, and belligerent during peak hours of traffic. His hours are erratic, his eating periods are irregular, and his emotions are subject to great stress. He can not afford the time from work and the relaxation incident to satisfactory medical regimen. It might also be stated that on the other hand when he has had an operative procedure he is going back to these stresses and should the procedure not prove satisfactory he promptly returns to the same surgeon.

Choice of Procedure and Technical Considerations

Except for certain very limited indications gastroenterostomy and pyloroplasty have not stood the test of time.

Gastric resection has stood the test of time and can be expected to give between 85 and 90 per cent satisfactory results.

Since it took many years to show that gastroenterostomy was unsatisfactory, one must be skeptical about gastroenterostomy with vagotomy. Gastric resection combined with vagotomy may be the final answer. Gastrectomy eliminates the hormonal phase of gastric secretion and permits neutralization and dilution of the remaining gastric acidity and eliminates functioning gastric and duodenal mucosa. Vagotomy on the other hand eliminates the cephalic phase of gastric secretion and thus when combined with resection further reduces gastric acidity. The mortality is not increased and the morbidity is but slightly increased by adding vagotomy to gastric resection and it allows the surgeon to do a possibly more conservative resection. The experience of men doing many resections has been quite consistent. In their first 100 cases the mortality was between 10 and 20 per cent; in the next 100 it would average about 5 per cent and thereafter could be maintained between 1 and 3 per cent.

° Presented before the annual meeting of the Arizona Academy of General Practice, Phoenix, Arizona, Feb. 5, 1954.

Technique

The resection will naturally be the one that satisfies the individual operator. There are numerous satisfactory techniques. My preference is for an anterior polya with an upper right paramedian incision with an exploration of the abdomen and usually if reasonably accessible the appendix is removed before proceeding to the resection. The vessels in the gastrocolic and gastrohepatic omentum are transected and ligated so that 65 to 70 per cent of the stomach can be excised including all of the lesser curvature. The duodenum is freed from the pancreas so that it can be transected below the ulcer. This is the heart of the matter and should be done unless the induration of the tissues is so extreme as to make it unusually hazardous.

As experience is gained one finds that in almost all cases it is possible to get below even the mass the size and consistency of a golf ball and find reasonable duodenum to close below the area. This is best accomplished by lifting the duodenum and freeing it from the pancreas by sharp dissection, cutting through the indurated tissue and ligating such vessels as are cut across. The dangers attendant to this have been somewhat overrated and as experience is gained it is somewhat like congenital anomalies which plague one at first and later become less common. The dangers of injury to the common duct are minimal if the dissection is performed in this manner. My preference has been to transact the duodenum between hemostats and close with a Connell Cushing gastro-intestinal suture after the method of Kehr-Parker, following which a purse string suture is taken to further reinforce the suture line and this usually includes the serosa of the anterior wall of the duodenum and capsule of the pancreas. The crux of the closure is to place serosa to serosa with at least one good layer. The suture material is somewhat unimportant as if healing is going to take place it will within 48 to 72 hours and when blow-out occurs it is due to distension in which case any suture material will cut through the tissues. Non-absorbable sutures may act as a seton and produce fistulas as long as six months after the operation has been performed.

One reason for the zeal in closing the stump below the ulcer has been the unsatisfactory developments when this is not performed. The National Committee on Peptic Ulcer reports that when the ulcer was not removed favorable results were reported in only 65 to 72 per cent and our experience is consistent with that in the literature, in that while many of these patients may be symptom free, the incidence of complications necessitating reoperation in at least 25 per cent.

As to the type of anastomosis performed. The anterior polya was performed in about 75 per cent of these resections and the distal loop of jejunum was placed along the lesser curvature of the stomach. This will avoid a closed loop proximal obstruction which can be a dramatic and usually a fatal complication. If retrocolic anastamosis is performed this complication will not occur but other complications may occur and in general the antecolic anastomosis gives the impression of being less complicated and produces equally satisfactory end results. A two layer gastro-intestinal catgut type of anastomosis is made for when the surgeon performs a three layer anastomosis there is a much higher incidence of edema and obstruction of the stoma presumably due in part at least to the excess amount of suture material. If a one layer anastomosis could be relied upon to control hemorrhage it would probably be adequate as far as healing is concerned and certainly the seromuscular layer is the important one.

About five years ago bilateral vagotomy was added occasionally to resection; the patients selected were those one might term the candidates for marginal ulcers. In other words, they were the worst possible cases and the results were excellent. Since that time the indications for adding vagotomy to resection have been expanded so that about half of the patients have the combined procedure. The results have been satisfactory and the complications minimal, although some will be mentioned subsequently. The experience with vagotomy and pyloroplasty has been minimal but again one wonders about a procedure which did not work out satisfactorily during the twenties and early thirties, although the advocates point out certain advantages, particularly maintaining normal gastro-intestinal continuity. One may wonder somewhat at this approach since the original ulcer naturally developed when continuity was normal.

The problem of the patient with massive exsanguinating hemorrhage is a real one. While a certain amount of nonchalance can be main-

tained on conservative treatment since the mortality rate averages about 6 per cent, it would certainly be wonderful if surgeons could pick the 6 per cent who were not going to respond and salvage most of them. Unhappily, the problem is not a simple one and in reviewing the resections on our services during the last six months at the County Hospital, it was noted that in 26 elective gastrosectomies there was one death, yet 12 resections were done for massive bleeding with 3 deaths, which is a substantial mortality rate.

Naturally if these 12 were ones who would have died on conservative treatment, the results are excellent. The patient with massive undiagnosed hemorrhage presents one of the most trying problems. If surgery is performed the search for the bleeding site may be time consuming and futile and in view of the fact that about 80 per cent of the lesions causing bleeding will be in the lower portion of the stomach and the first 3 centimeters of duodenum, possibly the philospohy of a quick resection without much exploration is justified. One patient who received 26 transfusions within 24 hours and never recovered from shock enough to justify exploration. At autopsy with complete exposure it was not until the stomach was examined with a hand lens that one discovered an acute gastric ulcer the size of an ordinary kitchen match with an artery protruding from the center of it. Another was a similar case in which there was a proven duodenal ulcer and at the time of resection an area of questionable thickening was felt somewhat high on the lesser curvature and resection was extended to include this area. When the stomach was examined, it was discovered that while the patient had an active duodenal ulcer, the bleeding point was in the high gastric ulcer. A less satisfactory case was a man with a proven ulcer with four massive hemorrhages on whom resection was done during the fifth massive hemorrhage. An ulcer of the duodenum was present but the patient continued to bleed and succumbed 48 hours postoperatively and at autopsy a cirrhosis of the liver was found with bleeding from esophageal varices. It is astonishing how frequently, when the jejunum is examined during the course of a routine resection that multiple telangectatic hemangiomas are found and yet the patient appears completely cured of the existing ulcer by the resection. The important point naturally is that these be described in the operative reports so that should hemorrhage occur at a later date the surgeon will know the possibility at least of one source.

Complications

The usual complications incident to any operation will not be covered here. The complications which could have been prevented may prove of more interest. One case is that of a 46 year old woman with a bleeding ulcer, having had symptoms for many years and four episodes of severe hemorrhage. She had a marked hypertension normally and had had a nephrectomy about ten years previously. In an effort to avoid numerous transfusions under these circumstances, a quick resection was performed, some difficulty being encountered is freeing the ulcer and in closing the duodenal stump. Recovery was satisfactory until the sixth postoperative day when there was sudden agonizing pain in the right upper quadrant associated with leukocytosis and mild fever. The probability of duodenal stump blow-out seemed reasonable and on reoperation the patient was found to have acute cholecystitis with cholelithiasis and cholecystectomy was performed.

Zeal in efforts to perform a quick resection resulted in neglecting the dictum that a quick look is better than a finesse and the usual palpation of the abdomen was omitted. Since that time gall stones associated with duodenal ulcer have found in 12 patients and in most of whom cholecystectomy was performed in addition to the resection. The removal of the appendix at the time of the surgery may save the surgeon some slight embarrassment as there were two instances, wherein, the appendix seemed somewhat inaccessible and was not molested and within 3 months the patient had to be reoperated for acute gangrenous appendicitis. Another illustrative case was that, wherein, the patient had the expected ulcer but routine palpation of the abdomen revealed an asymptomatic carcinoma of the cecum which was resected and the gastric resection performed at a later date.

The complication of diarrhea following vagotomy is usually limited to the first 4 to 6 weeks but in 2 instances persisted to the extent of being inconvenient for about 6 months. It might be noted that in selecting the patients in whom vagotomy and resection was performed most of them were the extremely constipated type of individuals.

The dumping syndrome of a serious nature occured in about 4 per cent of the patients and was not related to the type of procedure performed, in other words it occured in about the same proportion in posterior Polyas, anterior Polyas, or posterior-anterior Hoffmeister procedures. The general feeling is that the symptoms are produced by rapid dilatation of the jejunal loop due to flooding with liquid food. The picture is paradoxical in that one author reports decreasing the incidence when he changes from a Hoffmeister to a Polya procedure, and another reports just the opposite. Some 30 years ago a somewhat similar syndrome was described as the gastroenterostomy disease. All cases studied had marked weight loss and hypoglycemia, high glucose tolerance curves with a transient lowering serum potassium levels secondary to rapid binding of potassium inside the glycogen storing cells and also lowering of the blood phosphorus levels. Response was satisfactory under the treatment of a competent internist. The treatment consisted of high protein, low carbohydrate diet and Cortisone 25 mg. T.I.D. for the effect of raising blood-sugar levels plus the possible suppressive effect to the endocrine system of the release of epinephrine-like substances. Testosterone proprionate for its anabolic effects since Cortisone is catabolic and the patients were already in negative nitrogen balance. Potassium chloride grams 1 T.I.D. was given to counterbalance any fall in serum potassium levels secondary to Cortisone administration, multiple vitamins including folic acid for general supportive therapy and thyroid to several patients with evidences of thyroid deficiency. Two patients were given Sorolate in addition to the above to improve fat absorption. All patients were rapidly relieved of symptoms and gained an average of 20 pounds within a period of 3 months. One female patient had some edema which responded in lowering the dosage of Cortisone. Most patients can be taken off therapy in 3 or 4 months without loss of weight or return of symptoms.

In summarizing these patients, it was noticed that the incidence did not vary with the type of resection performed nor with the addition of vagotomy but the constant factor in all cases was a hyper-reactor type of individual and treatment of correcting the disturbed metabolism was successful in bringing about weight gain and relief of symptoms.

Postoperative care consisted of regulation of electrolyte balance and in cases of vagotomy the upper gastro-intestinal atonia which frequently was present. The results have improved considerably in the last few years with the use of the plastic suction feeding tube developed by Kaslow. The tube consists of a routine plastic Levine tube with a smaller plastic tube threaded inside of it. This smaller tube is maneuvered into the distol jejunum for a distance of about 2 feet below the stoma, whereas, the other tube is cut off in the region of the stoma. A continuous drip is then administered through the tiny tube and after a trial of many combinations of materials the most satisfactory was found to be Calorigen, which runs freely and is absorbed easily and contains a well balanced nutrient formula. The drip is started immediately upon the patient's return to his room and is maintained at the rate of one liter every 8 hours. Suction is kept on intermittently every two hours on the other tube. Care must be taken to fasten the tube securely in the nose so the patient does not inadvertently reach up and pull the tube from his nose upon awakening. This would be of no consequence ordinarily but in about 10 per cent of the cases the feeding tube is pulled up into the stoma and the Calorigen then siphoned off as fast as it is given. If this possibility exists a pinch of methylene blue is added to the solution and if it promptly returns in the suction parenteral fluids must then be administered. The place for food is in the gastro-intestinal tract and not in the veins and it has been gratifying to see the early return of peristalsis associated with this regimen. This is particularly true in those patients in whom vagotomy was performed as it would appear that presence of food in the G.I. tract stimulates the whole tract and the postoperative atonia has been almost absent. Occasionally the fluid will not absorb at this rate and distention is noted and then parenteral fluid must be given in addition. There is usually passage of liquid stools on the third or fourth day and the tube can be removed and a soft diet ordered. Early ambulation is routine and the average hospital stay is 8 days.

Patients are encouraged to get over their gastric neurosis and eat anything they care to and in general can eat without restriction except for the fact that for the first month they must

eat 4 or 5 small meals a day instead of 3 large ones.

Results have been excellent in 85 per cent of the cases and satisfactory in 95 per cent. The occasional patient with dumping syndrome as noted needs further treatment and there are many who are symptom free and are able to carry on an energetic way of life but do not gain weight. Very few patients have developed anemia and these responded well to pulverized iron given on an empty stomach before bedtime. Happily marginal ulcer developed in less than 1 per cent of the patients and in none in whom vagotomy was added to the resection. In the 5 per cent classified as poor results were those who were continually concerned with the feeling of gas and pressure in the stomach, but on whom studies revealed no positive findings.

It might be of more than passing interest that a high percentage of these were veterans who may have had some interest in obtaining a disability rating. In any event it is a source of satisfaction to the surgeon when patients who have had surgical treatment for ulcers continue to send their friends with ulcers in for similar treatment. The internist may control the patients satisfactorily but the regimen he places them on may not always be to the patients' satisfaction, whereas, the surgeon at least has the advantage of being able to tell his patient to lead a reasonably normal life, and those in whom this is not possible he can send back to the internist, usually in condition not worse than prior to operation.

THE LABORATORY STUDY OF THYROID FUNCTION

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THE thyroid is the only gland in the body which secretes a hormone, stores it outside the cells and releases it into the circulation as it is needed. The gland is responsive to a variety of stimuli which the organism as a whole encounters during life. Such, for example, are puberty, pregnancy, the amount of iodine and possibly other specific compounds in food and water of a particular geographical locality, extremes of environmental temperature and nervous strain. Many of these stimuli are regulated through the pituitary and the adrenal glands. Because of the lability of the thyroid and its great responsiveness to stimuli, it is difficult to define what is the normal gland. By the same token, it is usual to find some variation in the results of repeated tests on the same patient. Furthermore, dysfunction occurs not only as a quantitative change in normal functions but also as a qualitative alteration in iodine metabolism(1). It is not surprising therefore that thyroid function cannot be established by a single test and, much as one selectes from the battery of available liver function tests those which might clarify the individual problem, so a selection must be made in regard to the thyroid. There are several rather distinct mechanisms involved in the function of the thyroid gland and of its hormone which occur in the following sequence:

a. Extraction of iodide from the blood stream.
b. Synthesis of thyroxin.
c. Storage of the hormone as thyroglobulin.
d. Discharge of the hormone into the blood stream.
e. Utilization of thyroxine by the tissues and its influence on general body metabolism.

These mechanisms will also be influenced if hormone excretion is delayed, or if there is an unusual production of thyroid-stimulating hormone (TSH) by the pituitary. A special situation is created by the presence of thyroid nodules as contrasted with a diffuse hyperplasia. Most of these mechanisms can be studied in the laboratory and the available tests will be described with illustrative cases.

IODINE UPTAKE

The ability of the thyroid to take up iodide from the blood is studied best by the use of the radioactive isotope, I 131. This material which can be given orally in very small amounts of activity for ordinary tests, radiates a gamma ray which can be measured by placing a suitable detector over the gland. In order that the dosage of I 131 be kept small, the detector must be sensitive and efficient and the recording apparatus must be accurate. We use a collimated scintillation detector in front of the neck and recording is done with a scaler. The radiation in the thyroid is compared directly with a reference standard of an amount of isotope equal to the

oral dose and kept the same length of time so as to compensate for physical decay (the half life of I 131 is 8 days). Care must be exercised to duplicate the geometry when making these comparisons because slight changes in position or in distance create considerable change in the recorded radiation. In some laboratories, a single uptake determination is made 24 hours after the test dose has been given when, at least in the euthyroid patient, the maximum amount of I 131 has been trapped by the thyroid. However, we prefer to make observations at 6, 8 and 24 hours (and 48 hours in the suspected hypothyroid). This establishes the rate of uptake and can be used, if desired, to determine clearance and accumulation rates(2). The hyperthyroid traps iodide much more quickly than the euthyroid and in a severely toxic case, the maximum uptake may be reached much before 24 hours so that a single determination may not give a true picture of the clinical condition. It is sometimes helpful to repeat the procedure using intravenous administration of the test dose and repeated testing to establish the rate of uptake.

The boundary between normal and abnormal 24 hour I 131 uptake is not sharp. In the series published by Werner, Quimby and Schmidt(3), if the division between euthyroid and hyperthyroid is set at 35%, 94% of hyperthyroid patients were above this figure, 90% of normals were below. Most hyperthyroids had uptakes less than 10% but a few reached 30%. Because the division is not critical, additional testing often is required as will be indicated below.

Iodine uptake is influenced by previous medication. Thiouracil derivatives or other antithyroid drugs must be stopped at least 96 hours before the test. Inorganic iodide which usually has been given in the form of Lugol's solution, reduces the I 131 uptake for about three weeks and sometimes up to seven weeks. When Lugol's has been given, it is wise to procede the uptake study with daily doses of potassium thiocyanate, grains three, enteric coated, for two weeks and allow one more week before testing. This drug washes out the inorganic iodine in the thyroid. Thyroid medication also depresses the uptake, an effect which lasts for weeks. Organic iodinated compounds such as those used for urography, cholecystography, bronchography and myelography may produce a low uptake for months. Some foods such as kelp, rutabaga and cabbage may have a depressing action. Potassium thiocyanate, sulfa drugs, cortisone and mercuhydrin are other drugs which depress uptake.

Case 1. Lowered BMR, Not of Thyroid Origin

Female, age 37 years, has been taking thyroid medication (3 grains a day) for many years following the discovery of a "low" BMR. The patient was unwilling to refrain from the medication for any length of time so that an uptake study was done one week after stopping the medication, rather than the preferred three weeks. After a tracer dose of I 131, an uptake of 24 per cent at 8 hours and 30 per cent at 24 hours was established. Urinary excretion in 24 hours was 50 per cent (the 14 per cent not accounted for is distributed elsewhere in the tissues and some similar quantity is usually not accounted for in the thyroid and urine). A PBI determination showed 7.7 gamma per 100 ml. It is evident that this lady is not hypothyroid. The readings are "high normal" which might be even higher if there is any residual depression by the thyroid medication. It is important to note, however, that the medication in this case is not necessarily a therapeutic error but its use must be regarded as pharmacodynamic and empiric(4) rather than the correction of a deficiency. At the same time, it is well to bear in mind that thyroid hypoplasia may be produced by repeated large doses of thyroid(5).

Case 2. °Thyrotoxicosis Factitia.

Female, age 29 years. This patient gained a great deal of weight after her second pregnaney and was treated with reducing pills of unknown composition. Her weight fell from 170 to 130 lbs., at which time she stopped taking the pills. Three months later, she discovered that her husband was being unfaithful. During the following month, she lost 28 pounds more and developed a ravenous appetite. On examination, the eyes were normal, the thyroid was not felt, blood pressure 150/60, pulse 144. There was a marked tremor, marked perspiration, and a loud systolic murmur at the base of the heart. BMR was plus 72, PBI 16 gamma %. The I 131 uptake was less than 1 per cent. The patient denied taking any medication. When the diagnosis of thyrotoxicosis factitia was made, she consulted another physician who undertook to prepare her for surgery with propylthiouraeil. She took 300 mg. daily for a month, then 500 mg. daily, and ultimately, 90 mg. of tapazole a

° Some of these cases were seen in New York and are quoted with deep appreciation to Dr. S. Yohalem who gave permission for their use.

day. There was no improvement and the PBI rose to 26 gamma %. At this point, she was hospitalized and, after two weeks of daily psychiatric consultation during which she continued to deny that she took medication, she finally admitted taking two 5 grain tablets of thyroid daily. This case, then, illustrates the unique ability of uptake studies to differentiate thyrotoxicosis factitia.

Case 3.

Differentiation From Pheochromocytoma.

Male, age 38 years. This man complained of weight loss, sweating which seemed to come in waves, anxiety, irritability and headaches for six months. The BMR was plus 42, PBI 6.9 gamma %, I 131 uptake 30 %. The PBI 131 (which will be described in more detail in the next section) was 0.12% per liter. These findings excluded hyperthyroidism. A pheochromocytoma was then suspected and sought by provocative histamine test which was positive and a tumor was then removed from the right adrenal.

Case 4.

Thyroiditis Simulating Thyrotoxicosis.

Female, age 51. Relatively sudden onset of palpitation, weight loss and anxiety two weeks after a severe cold with sore thoat. There has been some pain in the neck on yawning, but at no other time. She lost 8 pounds and was advised by her physician to vacation. She felt much worse during this period and consulted another physician. The BMR was plus 25 and PBI 14 gamma %. Physical examination revealed a pulse of 120, blood pressure 140/75, 2 plus tremor, moist skin, normal eyes and a firm non-tender bilateral goiter without bruit weighing an estimated 40 grams. Thyroidectomy after preparation with thiouracil was advised but before the medication was started the I 131 uptake was found to be 2 per cent. The diagnosis was was revised to sub-acute thyroiditis with pseudohyperthyroidism. The patient was treated with conventional x-ray therapy receiving 600 r during four weeks. The symptoms disappeared, the BMR fell to minus 3 per cent and the PBI to 6.0 gamma %.

THE CONVERSION OF IODINE TO THYROID HORMONE

It has already been indicated that uptake studies alone may not suffice to establish or exclude hyperthyroidism. The investigation of thyroxine synthesis provides a further refinement. Thyroidal iodine is composed of a freely-dialyzable inorganic fraction and a non-dialyzable organically-bound fraction. The former can be discharge from the gland by an excess of thiocyanate ion, the latter cannot. Binding iodine into the organic molecule is an essential part of the synthesis of thyroxine(4). It can be blocked by drugs of the thiouracial group. Trapping if iodine by the thyroid and iodination of tyrosine are distinct mechanisms. It is thought that the iodide in the blood stream reaching the thyroid is oxidized to iodine with the aid of peroxidase. The iodine is combined immediately with tyrosine to form monoiodotyrosine, then diiodotyrosine. Triiodothyronine also is present in the gland in small amounts. The next step, conversion of diiodotyrosine to thyroxin also is promoted enzymatically.

Except for radioautographs of tissue removed surgically, the blood is the only tissue in which these mechanisms can be studied. Chemical and/or isotope technics can be used.

PROTEIN BOUND IODINE IN THE BLOOD

The chemical determination of the protein bound iodine (PBI) in the serum is probably the most easily applied test as far as the patient is concerned involving merely the withdrawal of a blood specimen. There is a certain lack of sensitivity because the technic is critical but this may be minimized by scrupulous care and experience. Iodinated substances such as gallbladder and kidney "dye" result in high values which may persist for months. The level also is modified by pregnancy and nephrosis: a low serum albumin may depress the PBI to 2 gamma %. There have been many reports of what constitutes the normal PBI range. Thus Kydd, Man and Peters(7) found a range of 3.8 to 8.6 gamma % with an average of 5.4 (standard deviation, plus or minus 0.94). The tabulations prepared by Starr(8) is convenient clinically:

Very low	0 — 2 gamma %
Low	2 — 3
Subnormal	3 — 4
Low normal	4 — 5
Normal	5 — 7
High normal	7 — 8
Super normal	8 —

PROTEIN BOUND I 131 IN THE BLOOD.

The chemical PBI level in the blood, is, in a sense, the expression of the "resting" state. By isotope technics it is possible to follow a given dose of iodine into the blood stream. The simpl-

est procedure is the determination of the activity of the plasma, 72 hours after the tracer (all blood activity must be measured with a well-type detector). Levels less than 0.26 per cent of the administered dose per liter of plasma excludes hyperthyroidism(14). When the total plasma activity exceeds 0.26 per cent, it is necessary to precipitate the protein bound I 131. PBI levels greater than 0.26 per cent indicates hyperthyroidism. The test is not critical for hypothyroidism.

Somewhat more elaborate tests have been devised and the conversion ratio as studied by Dwight Clark(9) and by Morton (10) seems to be a true function of hormone production. This ratio is expressed as:

$$\frac{\text{PBI 131} \quad \times 100}{\text{Total plasma I 131}}$$

In 150 cases, Clark reports very little overlap between proven hyperthyroids and euthyroids. Clark did not think the ratio diagnostic of hypothyroidism. Morton, using a butanol extract obtained diagnostic results in 93 per cent of his hypothyroid cases. We also use a butanol extract* since this extracts only the thyroxine which however is proportional to the PBI 131. Morton found the normal range of the conversion ratio to be between 2 and 10 per cent. A chromatographic study of the iodine-containing fractions of the blood may be of considerable value in the investigation of qualitative differences that are found in disease(11) and we* also are pursuing this type of study.

THYROID STIMULATING HORMONE

In the study of hypothyroidism, the response to TSH is of considerable importance. TSH concentrations in the blood have been assayed biologically but the technic is not yet firmly established. However, based on PBI 131 technics following TSH stimulation, Wilkins, Clayton and Berthong(13) arrived at an etiological classification of hypothyroidism which, in a summarized form, is as follows:

A. Congenital (Cretinism)
   1. Embryonic defect in development.
   2. Lack of iodine (endemic cretinism)
   3. Congenital goiter.
   4. Inability to convert iodine into thyroxine.

B. Acquired (Juvenile hypothyroidism)
   1. Primary atrophy of the thyroid.
   2. Specific deficiency of thyrotropic hormone.
   3. Secondary to general pituitary deficiency.
   4. Operative removal.
   5. Thyroiditis, Hashimoto struma etc.

Starr(8) gives the following quantitative summary:

Thyroid Status	I 131 Uptake Before TSH	After TSH
Euthyroid	14. %	46. %
Euthyroid receiving thyroid medication	6.5	44.
Euthyroid receiving thyroxine	15.	53.
Secondary hypothyroidism	14.	55.
Primary hypothyroidism	7.	10.
Primary hypothyroidism treated with thyroid	2.	2.5

A further test which probably will be of value is to create a physiologic TSH hypophysectomy with a single oral dose of triiodothyronine(12) and to follow this with I 131 uptake studies.

URINARY RETENTION.

The urinary excretion of iodine is subject to considerable variation. The difficulty of having patients keep 24 hour samples also contributes to error. However, activity measurements on successive samples may be helpful in diagnosis and are said to aid in the diagnosis of thyroid cancer(15). Urinary insufficiency whether primary or secondary to cardiac failure will result in abnormal retention of iodine. In the euthyroid where the uptake is about 30 per cent, the 24 hour urinary output is about 50 per cent. Readings as low as 20 or even 15 per cent are found in hyperthyroids and excretion occurs at a more rapid rate. It is our practice to do urinary studies as a check on the uptake and to detect a false result due to urinary insufficiency. We have not had the opportunity to study a thyroid cancer before operation to evaluate the reported altered rate of excretion in this disease.

*TISSUE UTILIZATION OF THYROXINE

Several metabolic effects of thyroxine can be studied in the laboratory and indeed, until the advent of I 131, these were the main avenues of exploration of thyroid function. The oxygen consumption, recorded usually as the basal metabolic rate (BMR) is increased in hyperthyroidism, decreased in hypothyroidism. The test is technically diffcult in many nervous patients, impossible in some. It is not specific. The rate may be low in starvation, malnutrition, certain

* The PBI determinations, PBI 131 extractions and chromatographic analyses perfrmed on patients seen in Phoenix were made at the Diagnostic Laboratory, Phoenix (Director, Dr. M. Rosenthal) hy E. Wilson, M.Sc., to whom thanks are accorded for his untiring assistance.

types of obesity, Addison's disease and lipoid nephrosis. It may be elevated in diabetes insipidus, leucemia and polycythemia. The serum cholesterol is often low in hyperthyroids, elevated in hypothyroid states; the correlation is not good. The urinary creatine, carbohydrate metabolism, growth and the cardiovascular system are studied with advantage. More often, it is abnormalities in one or more of these symptoms which lead to thyroid function studies.

The metabolic effects of thyroxine are probably mediated through triiodothyronine. This observation lead to a recently suggested test for hyperthyroidism(16) in which the effect of this drug on I 131 uptake is utilized. In euthyroids, there is a sharp decrease in the 24 hour uptake so that no value exceeded 20%. In toxic goiter there was no significant drop and no value under 35% was encountered.

CASE 5. HYPERTENSION WITH ADDED HYPERTHYROIDISM

Female, age 59 years. Known hypertensive for 12 years without congestive failure. ECG showed left ventricular hypertrophy. There was constant anorexia, severe headache and occasional palpitation on severe effort. For about a month, she became increasingly irritable and cried without apparent cause. Two months prior to this, her son was sent to Korea. One night she was seized with severe palpitation and a physician found auricular fibrillation which finally became fixed.

I 131 studies showed an uptake of 89% and a PBI 131 of 0.46% (the normal is less than 0.26%). The diagnosis of masked hyperthyroidism superimposed on hypertensive heart disease was made. She was treated with 2.5 mc of I 131. Within 2 months, the rhythm was regular, her weight increased 12 pounds and the BMR dropped from a previous level of 23% to 6%. The I 131 uptake after 2 months was 31%. The hypertension was not affected.

TOXIC ADENOMA

Since the advent of I 131, there is no longer any doubt that oversecreting tumors may occur in the thyroid which are etiologically different from the overactivity of the whole gland in Graves disease. The life history of these adenomas has been worked out(4) and some are found which produce thyroid hormone from birth. At first, the tumor is small and contributes little to the functional totality. However, the tumor may grow out of control and contribute more and more hormone. Frequently, the tumor comes to contribute more hormone than the normal part of the thyroid. Finally the tumor functions autonomously, the normal part of the thyroid becomes atrophic and the patient hyperthyroid. In Graves disease, so far as is known, the pituitary retains its control over thyroid function. The detection of "hot" nodules — nodules that take up iodine brisky — is within the exlusive province of I 131 technics. A directional detector tube is required to scan the entire thyroid gland and superior mediastinum. By use of a highly collimated tube, almost continuous surveys of thyroid tissue can be made either manually or automatically. The manual scan, while more time-consuming, gives a somewhat more quantitative result, and this is the procedure we currently employ. This study is of considerable importance and should be made routinely in the presence of one or more nodules because of the relatively high incidence of cancer particularly in single nodules. If a nodule is "hot", the chances are that it is not malignant but the finding does not exclude cancer. (4) Contrary-wise, a "cold" nodule must be regarded with a considerable suspicion of malignancy.

CASE 6. SINGLE FUNCTIONING NODULE.

Female age 41, known to have a "low BMR" for many years. Previous PBI determinations yielded values between 3.4 and 4.0 gamma %. The patient has been taking no medication. There have been no symptoms. Following a tracer dose of I 131, an uptake of 6% was found at 8 hours and 7% at 24 hours. The urine excretion was 81% in 24 hours. The PBI at this time was 3.6 gamma %. The patient has been aware of a plum-size nodule in the thyroid for at least 15 years which swells at times but promptly responds to small doses of iodine. On palpation, the nodule was found in the right lobe of the thyroid, the gland was not otherwise enlarged. A scan recorded a relative activity of 17 over most of the gland but 28 over the nodule indicating moderate function of the adenoma. These figures are not to be taken as precise indications of the function of the nodule because there was a greater volume of tissue under the detector tube when it was placed over the nodule. Whether this functioning adenoma is the cause of the reduced function of the normal part of the gland is debatable but serial observation is evidently required. By the same

token, we are not as seriously concerned with the possibility of malignancy in this nodule as we would be were it "cold."

CASE 7. ANXIETY STATE ASSOCIATED WITH NON-TOXIC GOITER.

Male, age 34 years. Known goiterous for 10 years. Relatively sudden onset of anxiety, palpitation, perspiration, occasional chest pain and weight loss. Physical examination showed a nodule in the left lobe of the thyroid, without bruit, a pulse of 106 and a coarse tremor. BMR was plus 45 and plus 41. The I 131 uptake was 28% and the PBI 131 0.06%. A manual scan of the goiter showed it to be essentially non-functioning.

SUMMARY

The laboratory tests available for the study of thyroid function are discussed. A discussion of which test is "best" is inconsequential since these tests measure different functions and are complementary. However, there is justification for the conclusion that, in suspected hyperthyroidism, the BMR is least informative. We recommend that both the PBI and I 131 uptake be performed. In hypothyroidism, the PBI and I 131 uptake also are the more useful, particularly when they are repeated after a dose of TSH. However, the BMR will sometimes define a group of patients who are not hypothyroid but benefit from thyroid medication.

In the case where these tests give equivocal results, study of the PBI 131 conversion ratio is recommended. Whether chromatographic analysis will be of clinical value is not yet determined. The thyroid "scan" is an essential procedure in the presence of a thyroid nodule and in post-thyroidectomy thyrotoxicosis and suspected cancer.

PBI and I 131 uptake studies are essential in cardiovascular patients suffering from auricular fibrillation of unexplained etiology and certain instances of hypertension, to uncover masked hyperthryoidism. It need not be emphasized that preliminary uptake studies are essential when I 131 therapy is to be given to patients suffering from intractable recurrent heart failure. The production of a medical thyroidectomy in these euthyroid patients is quite a different problem from the treatment of masked hyperthyroidism. This matter is of considerable importance since there is increasing evidence that the prolonged use of thiouracil drugs is of much more potential harm than treatment with I 131.

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MASSIVE GASTROINTESTINAL HEMORRHAGE DUE TO PEPTIC ULCER*

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IN THE past half century the treatment of bleeding peptic ulcer has undergone many modifications. Prior to the development of blood banks and readily available blood, treatment was directed primarily to control of gastric acidity. The earliest management was a starvation regimen to rest the stomach, in some cases combined with intubation to aspirate acid secretions, which might digest a clot. After a short period of starvation, patient would be given a diet of milk and cream, bland foods with alkali powders. Mortality studies with this management were widely discrepant as Manheim in 1926, reported a mortality of only 4.2%, but Chiesman in 1932 reported mortality as high as 25%. Although early feeding was recommended by Lenhartz in 1904, and modified later by Andresen(1) in 1927, it was not until 1933 that the Meulengracht diet which consisted of liberal pureed feedings including meat became widely accepted.

In 1947, Meulengracht(2) reported a mortality rate of 2.5% in his series of 1,031 patients treated by this regimen during the preceding 15 years. This group, however, included hemorrhage of all grades of severity, all origins, and not exclusively peptic ulcer.

About the same time that Meulengracht advocated conservative treatment with a free-feeding program, Finsterer(3), a Viennese surgeon, came out strongly for immediate gastric resection in an attempt to salvage such bleeding cases that seemed to be uncontrolled on immediate conservative therapy. In this country, Stewart et al(4) carried Finsterer's idea even more energetically, advising immediate operation on all patients with acute massive hemorrhage. However, the tendency at present in such cases is a short trial of medical therapy, as recommended by Heuer(5), although what constitutes a short period of treatment has not been entirely settled.

With the rapid accessibility of blood for transfusion, there has been sufficient data accumulated from major hospitals, to more adequately study the results and standardize certain procedures. The developments of anesthesiology have made gastric surgery safer and the results are more assured. Nevertheless, differences of opinion do exist on management of bleeding peptic ulcer, although most authors are agreed on a liberal feeding program and the administration of blood in large amounts. However, even in the matter of liberal usage of blood, Pollard and Wollum(6) stated that it should not be given unless definite shock exists or hemoglobin falls below 50%. Former standard dictums, such as large transfusions blowing out the clot, bleeding will stop when blood pressure is low enough, and no patient ever died of first hemorrhage, for the most part have been proven false and disregarded. The question as to the optimal time for surgery has not been settled. Meulengracht believes all patients should be treated conservatively. Heuer believes operation should be done after 48 hours if medical management fails. Stewart et al, believe that operation should be done immediately on all patients with acute massive hemorrhage.

TABLE I

Classification Of Upper G.I. Hemorrhage

Duodenal Ulcer	56
Gastric Ulcer	5
Stomal Ulcer	1
Gastritis	6
Carcinoma of Stomach	1
Esophageal Varices	11
Other	
Hiatus Hernia	2
Passive Congestion	1
Leiomyosarcoma of Jejunum	1
Unknown	7
	91

At the Veterans Administration Hospital, Phoenix, Arizona, during the preceding two and one-half year period, 91 patients with massive upper gastrointestinal bleeding were admitted (Table I). In 62 cases or 68% of these patients, hemorrhage from peptic ulcer was diagnosed. Gastric ulcer accounted for five cases (5.5%), and stomal ulcer was diagnosed in two cases, or 2% of the total. Treatment was instituted on the Medical Service under the close observation of the Internist and the Surgeon, and

*From Veterans Administration Hospital, Phoenix, Arizona.

the result obtained was the outcome of close cooperation on the part of the two services. An attempt was made to establish the exact diagnosis and etiology of bleeding in all cases. The history emphasized the duration of ulcer symptoms, number of previous bleeding episodes, quality of previous treatment, extent of alcohol consumption, previous surgical experiences related to peptic ulcer, and also results of previous x-rays. The condition of the patient was evaluated as to clinical signs of air hunger and peripheral vascular collapse. The presence of arteriosclerosis or other co-existing disease was carefully investigated. Blood pressure and pulse rate determinations were taken at the time of admission, and repeated as necessary every one to four hours. Hemoglobin and hematocrit determinations were done immediately and blood drawn for typing and cross-matching. The hematocrit and hemoglobin were repeated as indicated, usually at intervals of 6, 8, or 12 hours. Bleeding, clotting time, prothrombin time, and platelet counts were not done routinely unless a blood dyscasia was suspected.

Patients were placed at absolute bed rest, in a flat position, or if in shock, with the foot of the bed elevated. Dietotherapy was immediately started with a modified Meulengracht diet, with two drams of a colloidal aluminum hydroxide preparation given after each feeding. At the discretion of the physician, additional small feedings and medication were given during the night. This regimen provided a sufficient nutritional intake, in addition to being an effective buffering diet. Within one to two days after definite evidence that the bleeding had subsided, the diet was increased to a bland, low-residue diet, with between-meal feedings. The use of anticholinergic drugs, together with necessary sedation was left to the discretion of the physician.

The liberal and early use of blood transfusions is one of our most important phases in medical management. Sufficient blood is given to raise the hemoglobin to 70%, with at least two units of cross-matched blood in reserve at all times during the active bleeding episode. The 70% hemoglobin was arbitrarily set as it provided sufficient blood to avoid anoxia and preserve bodily functions, as well as providing for an adequate margin of safety if recurrent bleeding ensued.

On basis of the immediate clinical evaluation and response of patient to therapy, these patients were classified in accordance with Dunphy and Hoerr's(7) criteria (Table II).

TABLE II

Classification

(Dunphy and Hoerr Criteria)

Group I — Moderate	27
Occasional syncope with onset	
No disturbance of circulatory stability	
Group II — Severe, Compensated	50
Bled 500-1000 cc. daily	
Circulation stable	
Group III — Severe, Decompensated	12
1000-1500 cc. lost daily	
Shock only prevented by 500 cc. blood every 8 hours or sooner	
Group IV — Exsanguinating	2
1500 cc. or more daily lost	
Shock persists	
	91

Thus, patients who had evidence of peripheral collapse in spite of rapid replacement therapy, were classified as exsanguinating. The group that had a general improvement from immediate transfusion and a schedule of 500 cc transfusion every 8 hours or less, and who presented an increase in the hemoglobin and hematocrit were classified as "moderate." That group which showed a stationary hemoglobin and hematocrit in spite of transfusion, was classified as "severe - compensated," implying that the rate of blood loss was equal to rate of transfusion, or approximately 1500 cc a day. Finally, there was that group which, without clinical evidence of shock, and on a schedule of 1500 cc of blood per day, showed a falling hemoglobin and hematocrit. These were classified as "severe — uncompensated." The greatest number of cases was in the severe compensated group, 50 patients (55%), with only 2 in the exsanguinating category (2%).

The prognosis of hemorrhage in any individual case was difficult to establish early. Many authors consider the first 72 hours as the critical period. If after the first massive hemorrhage, bleeding ceased, prognosis was excellent. However, if recurring bouts of bleeding continued, prognosis was increasingly poor.

Crohn and Janowitz(8), in reviewing large series of reported cases, had shown a mortality rate of 6.9%, with massive hemorrhage under medical therapy, and those treated surgically within 48 hours, had a mortality rate of 10.5%. With intractable bleeding, where surgery was

performed as late as three weeks following the onset, the mortality rate increased to 24.4%. Saltzstein, Mahlin and Scheinberg(9) reviewed 343 cases of bleeding peptic ulcer at Harper Hospital, Detroit, between 1947 and 1951. Of these, 80% were treated medically, with a mortality of 5.15%. Half of these deaths occurred in mild bleeders, several of whom had associated cardiovascular conditions. In many of these cases the anoxia of gastrointestinal hemorrhage may have precipitated cardiovascular accident. The remaining 20% were treated surgically with four deaths or a 5.9% mortality. In their study they also pointed out that hematemesis had a more serious prognosis than melena alone, as observed in the earlier reports by Meulengracht. However, in the above series, only 10% of their patients were in the exsanguinating group, with the overall mortality of 5%. This compared favorably with Gott, Smith and Dornan's(10) review of 195 cases at the Veterans Administration Hospital, Louisville, Kentucky, with an overall mortality of 5.6%. Twelve per cent of their patients were operated on within a four-day period. However, statistics concerning this problem were often misleading, as in the medically treated cases those cases ultimating in surgery, were excluded from their series. Warthin et al(11) at the Veterans Administration Hospital, Boston, Massachusetts, in their 184 peptic ulcer patients encountered 6 deaths on a combined Medical-Surgical-Radiological team management, with a gross mortality of 3.2%.

From this statistical data, it is obvious that the massive hemorrhage case is a joint responsibility of Internist and Surgeon. Taking into account some of the less favorable statistics, the medical mortality with conservative treatment in all cases of grave hemorrhage, originating in ulcer, averaged at least 5% and it increased to 10% if massive hemorrhage was tabulated alone.

The decision as to whether a gastrointestinal x-ray examination should be resorted to as an emergency, or delayed, has also been a subject of some differences of opinions. We have not hesitated to do x-ray examinations of the esophagus and stomach in patients who have been brought out of shock and have at least two units of blood in reserve. Schatzki's technique, which is a modification of Hampton's method, should be employed. In the compensated bleeders (particularly those with their first bleeding episode) early roentgen examination is advised as rapid healing of small gastric or duodenal ulcers within 10 to 12 days have been reported. If x-rays are deferred beyond this period these ulcers are not detected and case would probably fall into the category of "unknown sources of bleeding." Zamcheck(12) satisfactorily demonstrated the advisability of early roentgen diagnosis in massive bleeding from the upper gastrointestinal tract in order to localize the source of hemorrhage. Warthin agrees with Zamcheck's conclusion, and in their series of cases, have reduced the number of unknown sources of bleeding by 50%. Twenty-six of our cases had emergency x-ray studies during the active bleeding episodes, with a positive x-ray diagnosis established in 17 cases (65%), with no untoward effects.

SUMMARY AND CONCLUSIONS

Ninety-one cases of massive upper gastrointestinal hemorrhage are reviewed. Sixty-two cases or 68% were due to peptic ulcer (duodenal 62%, gastric ulcer 5.5%, stomal or jejunal ulcer 1%). Thirty-two cases did not have any previous hemorrhage (51%). Excluding peptic ulcer, hemorrhage due to esophageal varices was the next largest group of bleeders (11 cases or 12% of total). In the unknown category, there were seven cases or 6.6%.

All cases were treated medically with only two requiring surgery after a short period of medical treatment. There was no mortality in any of these cases. The two patients who subsequently required early surgery had a hemorrhage from a benign gastric ulcer and recovered following an early subtotal gastric resection.

Whenever gastrointestinal x-rays were undertaken during active bleeding, there were no apparent ill effects. In 26 cases thus examined, a positive diagnosis was reached in 17 (65%).

There was no correlation in the various age groups, as to the severity of the hemorrhage, and it is our feeling that judging by age alone, no security can be felt in predicting that any individual will not have an exsanguinating hemorrhage. It is true that the bleeder, who compensates early, regardless of the initial severity of hemorrhage, may be brought to surgery at a later elective date. However, in this group, only 12 patients out of the recommended total of 45 were operated upon (27%), the remainder deferring or refusing surgery. From this observation consideration should be given to oper-

ate this group of patients at an intermediate period (four to five days) as they may refuse definitive surgical treatment after compensation occurs.

From our observations, the severe-compensated or uncompensated bleeder may improve with sufficient blood after 48 to 72 hours. Therefore, the decision to operate does not necessarily have to be made in 48 or 72 hours, provided the patient can be maintained without anoxia. There is a definite advantage in bringing the patient to operation with the anemia, blood volume and electrolyte imbalance all corrected.

Consideration should be given to operate on these patients in an intermediate period (fourth to tenth day) for two reasons: First, to avoid the danger of an early subsequent fatal hemorrhage; and secondly, because of change of attitude of patient (refusing surgery) as he improves.

The same criteria may be applied to the moderate or severe - compensated bleeder, who has pre-existing indications for gastric surgery, such as previous gastric hemorrhages, duodenal or pyloric obstruction, or intractability to medical ulcer management.

It is in these two latter groups that we feel more energetic efforts towards early surgery should be exercised by the physician or Internist together with close cooperation with the Surgeon.

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The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE

A sixty-three-year-old woman entered the hospital because of bloody diarrhea.

The patient, who had enjoyed robut health, suddenly began to have nausea, diarrhea and fever three weeks prior to admission; she did not vomit. For a week she had three or four daily loose movements of dark-brown feces, which contained streaks of both fresh and changed blood; this was accompanied by a vague discomfort in the left lower quadrant and a feeling of distention that we relieved somewhat by belching or bowel movements. During the subsequent two weeks the diarrhea became less noticeable; a few flecks of blood remained in the stool, and occasional left-lower quadrant pain was noted. However, during this time she lost 10 pounds in weight. There was no actual visible distention, crampy pains, vomiting, massive bleeding, tenesmus, narrowing of the stool caliber or tarry stools. On the afternoon of admission the patient suddenly began to have frequent urgent bowel movements, which were accompanied by tenesmus, mild, crampy left-lower-quadrant pain and a feeling of weakness. The feces contained at first fresh blood and later a mixture of fresh and clotted blood.

For the ten years prior to entry the patient had mild constipation and took a cathartic every second or third day. There was no history of rheumatic fever, angina, ankle edema, dyspnea, orthopnea, food intolerance or previous diarrhea or melena. She was apparently a very stoical person, but she allegedly had made vague references to abdominal pains to her friends for a number of months before admission.

Physical examination revealed a very pale woman. There was no venous congestion. The chest was clear. The heart was slightly enlarged, and a grade II systolic murmur was heard over the entire precordium. The abdomen was soft, and no masses were palpable, but there was diffuse tenderness on palpation in the left lower quadrant. Constant hyperactive peristaltic sounds were heard on auscultation. No masses were felt on rectal examination, but dark-red blood was present on the examining finger. Pelvic examination was negative.

The temperature was 99°F., the pulse 80 and slightly irregular, and the respirations 20. The blood pressure was 115 systolic, 70 diastolic.

The urine was normal. Examination of the blood disclosed 9 gm. of hemoglobin and a white-cell count of 9300. The non-protein nitrogen was 23 mg. and the total protein 5.0 gm. per 100 cc; the prothrombin time was 15 seconds (normal, 14 seconds). Sigmoidoscopic examination revealed an area of narrowing 18 cm. above the anus, beyond which the scope could not be passed and which could not be dilated with air; the mucosal pattern of the rectum was normal. The barium-enema examination showed no gross defects within the colon except for multiple diverticula in the sigmoid colon; there were no associated signs of inflammation. Barium filled the entire colon and refluxed into the terminal ileum without difficulty. There was good emptying of barium from the colon. The mucosal folds of the descending colon appeared to be slightly thickened; in other areas it was not remarkable. A roentgenogram of the chest showed clear lung fields a tortuous calcified aorta and a slightly prominent left ventricle. An electrocardiogram showed auricular premature beats and non-specific T-wave changes; the pattern was not diagnostic of a definite abnormality.

The rectal bleeding subsided during the first three days in the hospital but recurred a week later and persisted. A repeat sigmoidoscopic examination again demonstrated an obstruction to the passage of the scope about 18 cm. above the anus where the lumen was narrowed to a diameter of approximately 0.5 cm. A definite

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organic stricture could not be demonstrated at this point, and the observer believed that the narrowing most probably represented spasm. The mucous membrane at this level was edematous and reddened and tended to prolapse into the lumen; below this level there was no abnormality. The patient continued to pass blood by rectum. On the fourteenth day an operation was performed.

Discussion by Dr. Howell Randolph:

This healthy 63 year old woman certainly had something wrong in the left lower quadrant. This localization is quite definite as given by the findings and by the symptoms. The record is not quite so clear as to whether the onset was extremely acute, but bleeding certainly occurred over a period of about five weeks prior to the date of her surgery. The persistent bleeding further locates the lesion as being either within the colon or immediately adjacent to and communicating with the sigmoid colon or rectum.

No indications of general peritonitis were found. Bleeding was so persistent and recurrent that the hemoglobin dropped to nine grams. The first thing that comes to mind is the possibility of carcinoma of the colon. A recent report of Hodges of 15,300 colon examinations by x-ray, revealed 131 primary neoplasms of the large bowel. 102 of these were verified. In the syptomatology, change in the bowel habits in 48 per cent, blood in the stools in 43 per cent, abdominal pain in 20 per cent. In 70 per cent of these cases sigmoidoscopy was successful in making a diagnosis. However, in our patient, at the 18 cm. level, definite concentric narrowing of the colon occurred which was thought possibly to be due to spasm, in view of the fact that the x-ray examinations were negative for carcinoma. Hodges' study fails to state how many x-ray examinations were negative in the presence of an actual tumor, however. 83 per cent of the tumors were found in the sigmoid and rectum and only 17 per cent in the transverse ascending or descending colon. The impression was given that carcinoma is almost always recognized by x-ray examination. So, for the sake of argument, let us turn to a second possibility. Multiple diverticulae were noted in the sigmoid colon on the x-ray following barium enema. Their so common occurrence on routine examinations tends to lessen one's awareness of the potential malignant character of these lesions, not in the sense of new growth but in the sense of sources of serious complications. Diverticulae may become quite large and may rupture and cause general peritonitis or localized abscess formation. These were present in approximately 25 per cent of all cases examined in Hodges' study. Polyposis is another condition which might be present, but it is not diagnosed on these x-rays. When serious polyposis is present, intermittent bleeding is rather common. Since the sigmoidoscope did not go above 18 cm., it is possible either one of these conditions could have been missed, as they usually exist in the upper sigmoid.

Infection such as amebae were probably ruled out but not mentioned.

Although this patient had no chronic symptoms as would be explained by a chronic colitis, some ulcerative lesion of the colon other than malignancy could have produced the localizing symptoms. Since symptoms and signs are so well localized in this case, rather than wander far afield in search of remote possibilities, I am going to place my chips on the diagnosis of diverticulitis with diverticulum abscess and ulceration of bowel with hemorrhage.

Differential Diagnosis

DR. WARREN POINT: This patient had ten years of mild constipation and then a sudden onset of left-lower-quadrant inflammation with bloody diarrhea. Further examination revealed a normal rectum and an apparently spastic area 18 cm. above the anus, at which point the mucosa was reddened and edematous. X-ray examination revealed no filling defect, with satisfactory emptying; there was no stricture. Hence I must call the narrowed area "spasm", rather than true cicatricial, or neoplastic, stricture. Contrary to the x-ray interpretation in the record, the films that were given to me with the protocol revealed "amputation" of diverticula in the sigmoid, and this, with thickened mucosal folds in the descending colon, is adequate evidence of inflammation of some type. This interpretation is confirmed by the sigmoidoscopic picture of spasm and edematous, reddened mucosa.

I am satisfied that the barium enema and the sigmoidoscopic examination together gave an accurate picture of the lower bowel. There is no evidence that disease existed elsewhere to

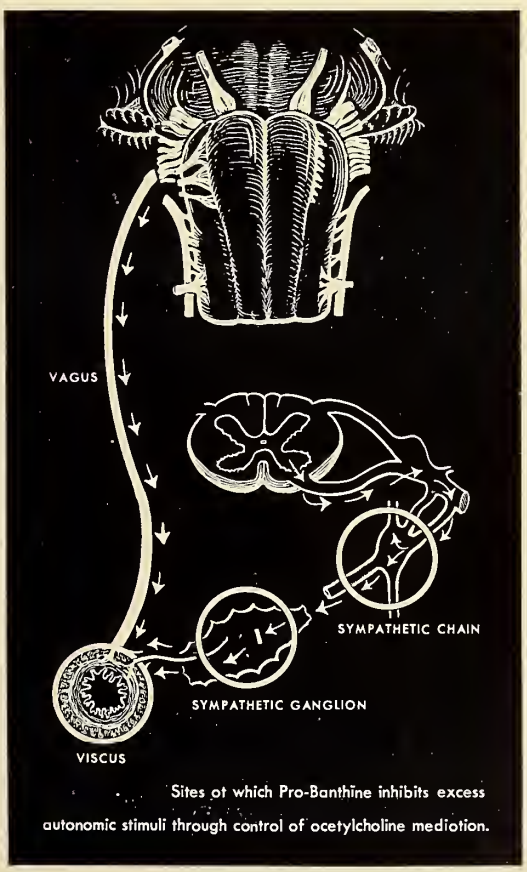
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Pro-Banthine (β-diisopropylaminoethyl xanthene-9-carboxylate methobromide, brand of propantheline bromide) is available in three dosage forms: sugar-coated tablets of 15 mg.; sugar-coated tablets of 15 mg. of Pro-Banthine with 15 mg. of phenobarbital, for use when anxiety and tension are complicating factors; ampuls of 30 mg., for more rapid effects and in instances when oral medication is impractical or impossible.

For the average patient one tablet of Pro-Banthine (15 mg.) with each meal and two tablets (30 mg.) at bedtime will be adequate. G. D. Searle & Co., Research in the Service of Medicine.

1. Schwartz I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.

2. Roback, R. A., and Beal, J. M.: Gastroenterology *25*:24 (Sept.) 1953.

SEARLE

explain the symptoms, since all signs pointed to the left lower quadrant.

What pathologic entities could account for this picture? Ulcerative colitis is not suggested by the sudden onset in a patient of this age, the lack of ulcerations by x-ray and direct examination and the whole clinical picture. Amebiasis is fairly well ruled out by the course of the disease, the fever and the intense localization. The last would presuppose an amebic granuloma, which is not suggested here. Lymphopathia venereum may produce a rectal stricture, but this was not a stricture, nor was it the chronic course of this veneral disease. Bacillary dysentery of such severity would produce an intense, diffuse inflammation of the entire colon, and there would be no sparing of the rectal region. Benign polyps may bleed massively at times, but it is unusual. Certainly, fever and inflammation would be highly unusual. The same reservation holds for any other potential bleeding lesion, such as angioma. There was no evidence for lymphoma, malignant melanoma, tuberculosis and so on.

Carcinoma must be considered. This is a fairly common cause of rectal bleeding and change in bowel habits such as this patient described. It is probably the most common cause of rectal bleeding in older patients if we except hemorrhoids. Perforation of the tumorous colon may produce an abscess with attendant signs of leukocytois, fever and tenderness. Ulceration of the tumor may cause bleeding. Intermitten, spontaneous diarrhea may alternate with constipation in about 20 per cent of the cases of carcinoma of the descending colon, despite the fact that it is much more common to have constipation and obstructive symptoms. It is difficult to accept this diagnosis, however, because adequate examination of the bowel failed to reveal any sign of filling defect or a mass. Obstructive spasm below a carcinoma is rare; if the growth is within reach of the sigmoidoscope, it should be seen easily. According to Bockus, this is an important point in differentiating carcinoma from diverticulitis of the sigmoid colon.

Diverticulosis was most certainly present in this patient, and I believe there is adequate evidence of diverticulitis, with spasm, tenderness, fever, diarrhea, mucosal edema and "amputation" of several of the pockets. This indicates nonfilling of the pocket itself, with partial filling of the neck — a condition seen with an inflamed or narrowed entrance to a diverticulum. Sigmoidoscopic examination is rarely diagnostic for diverticula, but contracture of spasm is commonly seen in the presence of inflammation. The inflamed section of bowel may be rigid and angulated. These findings are also confirmed by x-ray examination in many cases.

Bleeding from diverticula has been a controversial subject for many years. This point is now fairly well accepted. Willard and Bockus found gross bleeding in 5 of 72 cases of diverticlosis. The danger in accepting this theory is that diverticulosis is quite a common disease in the older age group, and the physician must not let the known presence of diverticula blind him to the possible presence of other bleeding lesions. There is no reason to believe that diverticulosis predisposes to the development of carcinoma.

In conclusion, I believe that this patient had diverticulitis of the sigmoid colon, the most common and usually the only symptomatic location. The operation performed was probably local resection of the involved sigmoid, possibly with a preliminary colostomy to divert the fecal stream and promote healing before a direct attack upon the involved area. Whether this was necessary is dependent upon the degree of local sepsis. Since no mention is made in the protocol of continuing high fever, and since fourteen days elapsed before operation, I assume that it was a primary resection. This should have been adequate time to prepare the infected bowel for operation.

I cannot rule out an incidental carcinoma that produced bleeding, but there is no evidence for this, and I have abundant evidence for significant diverticulitis of such a degree as to produce gross bleeding. I shall, therefore, confine my diagnosis to diverticulitis of the sigmoid colon.

Clinical Diagnosis

Diverticulitis.

Dr. Point's Diagnosis

Diverticulitis of sigmoid colon.

Anatomical Diagnosis

Chronic ulcerative colitis, localized to sigmoid. Diverticulosis.

Pathological Discussion

Dr. DAVID KAHN: This case, I fear, had a number of diagnostic "blind spots". The only

sure way of making a diagnosis was by operation. The preoperative clinical diagnosis was diverticulitis. After a preliminary transverse colostomy, 48 cm. of descending and sigmoid colon was removed. Numerous small diverticula were present but these all had wide necks and showed no evidence of diverticulitis or peridiverticulitis. There was a 12 cm. segment of the bowel that was indurated and thickened; this began 7 cm. from the distal resected edge. The mucosa in this area was irregularly ulcerated, the ulcers being irregular in shape and size, but being on the whole longitudinally disposed. There were only small areas of hyperemic mucosa separating these ulcers. The ulcers on the whole were shallow, had sloping edges and were not undermind.

Microscopical examination showed the depth of ulcers to vary, some involving only mucosa, and others mucosa and submucosa; a few penetrated to involve the superficial part of the inner muscle coat. The surface of many of the ulcers was covered by a thin coat of fibrin, and the floor was made up of a loose vascular connective tissue infiltrated by a varying number of lymphocytes and plasma cells and an occasional eosinophil. In others the ulcer surface was lined by a layer of flattened cells, and the floor composed of either vascular connective tissue or fibrous tissue resembling submucosa; this may have represented early healing. The muscle coat was somewhat thickened and hypertrophied and had some scattered fibrosis. A very occasional crypt abscess, as described by Warren and Sommers, was found.

A new thought concerning ulcerative colitis has recently been suggested by Levine and his co-workers. Using histochemical technics and phase microscopy, they demonstrated certain distinct changes in the basement membranes and intercellular connective tissue in the mucosa and submucosa in biopsy material removed from patients with ulcerative colitis. The changes were similar to those seen in the "collagen diseases", and these workers regarded the fundamental tissue reaction in ulcerative colitis as similar to that in this group of diseases. We examined sections stained by the periodicacid Schiff technic, but the findings were equivocal. We were unable to find any constant basement-membrane change except in a few degenerated surface glands, or fibrinoid necrosis or vasculitis; the fact that we studied formalin fixed material made interpretation of these stains somewhat less specific.

We found no evidence of tuberculosis, amebiasis or of any other specific cause for this ulcerative process and so must classify it as idiopathic ulcerative colitis. Whether this will remain as one of the less common varieties of ulcerative colitis, the localized type, remains to be seen; it may well spread to involve other parts of the large intestine. At the end of three months the patient appeared to be doing well, and sigmoidoscopic and barium enema examinations were negative. It may be worth while to add here that our colleagues in the x-ray department inform us that, as Dr. Point has already pointed out, diverticulitis is rarely responsible for gross bleeding.



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THE *President's* PAGE

STATE OF ARIZONA
TWENTY-SECOND LEGISLATURE
FIRST REGULAR SESSION

Measures Introduced of Interest to Medical Profession

H. B. 36 OPTOMETRY

Provides for exempting of disabled veterans experienced in optometry from qualifying examinations as a requirement for receiving a license to practice in Arizona. This bill has been opposed by the American Legion and termed class legislation.

H. B. 47 ESTABLISHMENT OF CLINICS FOR CHILDREN AND ADOLESCENTS

Authorizes the state department of health to establish and maintain clinics for diagnosis and treatment of children under 19 years of age who are afflicted with crippling diseases.

H. B. 54 STATE-WIDE PREVENTIVE MENTAL HEALTH PROGRAM

Provides an appropriation to the state department of health to set up and maintain with federal aid a state-wide preventive mental health program.

H. B. 73 OCCUPATIONAL DISEASE AND DISABILITY

Provides increase in benefits payable due to disability or death from silicosis or asbestosis.

H. B. 81 ARIZONA STATE BOARD OF PSYCHOLOGICAL EXAMINERS

Provides for the creation of the Arizona State Board of Psychological Examiners to license psychologists and psychological technicians and to regulate and control their practices, specifically prohibiting the practice of medicine.

H. B. 90 NARCOTIC DRUGS

Provides for the filling of physicians' oral prescriptions calling for certain narcotic drugs or content, in accordance with the directive provided through federal legislation during the 83rd Congress permitting oral prescriptions.

H. B. 94 PRE-MARITAL BLOOD TEST

Prescribes a pre-marital examination for venereal disease and provides for a certificate of blood test.

H. B. 113 PUBLIC HOSPITALS

Relates to hospitals supported by public revenue and makes physicians liable for hospital fees of their private patients in public hospitals.

S. B. 42 OBSCENE AND INDECENT AND SUBVERSIVE LITERATURE

Prohibits sale of obscene and indecent and subversive literature with possible effect on prescribing of contraceptive measures.

S. B. 78 CREATING THE ARIZONA COMMISSION ON ALCOHOLISM

Creates the Arizona Commission on Alcoholism to be composed of five members appointed by the Governor approved by the senate to serve for terms of five years.

These and other important bills are being reviewed by your Legislation Committee. If you have any questions or suggestions to offer, contact your Chairman, Doctor Millard Jeffrey, 411 Security Building, Phoenix, Arizona.

Editorial

ARIZONA MEDICINE

Journal of
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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

BLOOD TRANSFUSION

A RECENT meeting of the Good Samaritan Hospital Staff in Phoenix served to crystalize to the staff the inherent risks of blood transfusion. No method of screening or testing can eliminate a 0.1-0.5% risk of hepatitis from transfusion of whole blood in well-managed blood banks. The risk of a transfusion actually exceeds the risk of modern anesthesia administration in surgery. Therefore for *minor* anemias or blood loss problems, transfusions should never be used.

In moderate shock or blood loss problems liquid plasma stored at room temperature — for six months or longer by well-managed blood banks, can be used with negligible risk of serum hepatitis, and effective control of the patient. Not so the lypholized plasma of wartime!!

In severe blood loss or shock, whole blood transfusion is available, and in spite of its small risk of serum reaction hepatitis, is valuable and life-saving where really needed.

The use of levophed to control falling blood pressure in the actively bleeding patient is dangerous inasmuch as it drives more blood out of the circulation. In rapid hemorrhage, whole blood transfusion, not too rapidly given, is preferable 'till preparations can be made to surgically or medically arrest the hemorrhage, when rapid transfusion may be safely employed to raise the pressure and restore blood volume.

Over transfusing or too rapid transfusing with it's dangers of pulmonary edema must always be watched for, and if necessary bleeding of the patient and positive pressure respiration employed.

By thoughtfulness the physician will not employ whole blood where he can correct anemia by medical means, or overcome transient not too severe difficulties with plasma. There should be no post-operative death from blood transfusion hepatitis where the surgery only called for a single 500 cubic centimeter transfusion.

Use blood transfusion, therefore, only with studied caution where it's need is completely justified and proper.

NOTICE

ALL CONTRIBUTORS OF ARIZONA MEDICINE SHOULD HAVE THEIR MATERIAL IN THE JOURNAL OFFICE NOT LATER THAN THE 10th OF THE MONTH PRIOR TO PUBLICATION IN ORDER TO HAVE ARIZONA MEDICINE REACH ITS READERS ON OR BEFORE THE 10th OF THE MONTH

Material arriving after that date will be published the following month.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER

A piece of FAN MAIL has arrived from E.B.S. of Phoenix, but it wasn't the flattering kind. . . . He takes issue with a report in this column (Dec. 1954) which mentioned the lack of TOXICITY from the prophylactic use OF TERRAMYCIN in nephrosis and rheumatic fever cases. . . . He sent a reprint from the New England Journal of Medicine, describing the use of fairly good-sized doses (0.5 to 1.0 gm. per day for 8 days) in 20 Cleveland families. There WAS toxicity. . . . Sorry. We were just quoting in the December paragraph, but the doses were only a tenth of the Cleveland amounts, the use was for 1 to 3 years, and we noted that "It is said" to be almost free of toxicity.

It is not unpleasant to get comments or corrections, so don't hold off because it might strike a sensitive spot. We could say (if the stenographer or printer doesn't ruin it) what a Delaware newspaper once said in appreciation of corrections, — "THAMKS!"

VITAMINS have been used in another new way (or new title). The preparations are called "Stress Fortified", and combine a tetracycline drug with a load of vitamins. . . . The indications include acute or chronic infection, and the secondary indication of convenience.

J. G. Allen, prof. of surgery at the University of Chicago, reports more extensive results of his "lazy method" for STERILIZING PLASMA. . . . It was suggested last year that storing plasma at room temperature for 6 months resulted in a decrease in 'homologous serum hepatitis'. Now he says that, in contrast to 200 cases of jaundice following 1500 transfusions, they have data to show a complete absence of 'virus jaundice' after 300,000 plasma transfusions.

Dr. Allen also reports that 3 cases of SEVERE ULCERATIVE COLITIS treated by total colectomy are all alive and back at work. This is a terrific result in a tough condition.

The American Academy of General Practice is sponsoring greater use of the PRECEPTOR TRAINING system which is in use in 22 medical schools, and compulsory in nine. . . . Bibler of Indiana summarizes (and gives testimonials to) its use in the small journal 'Current Medical Digest'. He mentions Texas, Kansas, Wisconsin, Iowa, South Dakota, Yale, Oklahoma, Vermont, and Washington as schools in which the program is routine. He also gives the Indiana method a plug. . . . The idea of having students spend a few weeks or months with a physician or clinic goes back to the 1700's, and was the ONLY way until 1765. We suspect that the University of Wisconsin preceptor system is the oldest and best organized of the modern compulsory programs. The late Dr. Charles Bardeen was given the credit for starting and carrying it along in the years after 1925, tho the late Dr. Joseph S. Evans helped found and continue it. They have used clinics in ten or eleven of the larger cities of the state, and it makes Every Man His Own Professor, as well as giving the kids an idea at what they may want to aim.

The evident SENSITIVITY OF THE BONE-MARROW to the new drugs is VERY evident from case-reports in current medical literature. Depression of blood cell formation, especially WBCs, can occur with Fumagillin, Butazolidin, Thorazine, et al., ad infinitum. . . . You name it and SOMEONE has found a neutropenia. It was ever thus.

It has been reported that interns and residents want less 'dry' teaching, less 1, 2, 3 lectures, and MORE CASE-ANALYSIS presentations. . . . Wyeth Co. apparently is jumping to translate these requests to medical advertising. An entire pamphlet of "Your Patient" (which they have started to publish) is filled with an illustrated script of an intern, an attending M.D., and a bacteriologist examining cases of sore throat, checking the bacterial and sensitivity findings, discussing the cases, and dropping a casual mention of the use of Bicillin (Wyeth). . . . Quite good.

The anabolic effect of ANDROGENS in the elderly is often good if one does not forget that sodium is retained as well as nitrogen and potassium. . . . The clinical effect can include a sense of well-being, and better muscular and mental activity.

Something has happened to IRON METABOLISM since our days of learning, including a convulsion of terminology. . . . It now seems quite clear to quite a few people that ingested iron becomes ferrous iron after contact with the hydrochloric acid of the stomach. Ferrous iron is then absorbed from the duodenal mucosa (at a rate determined by reserves in storage), combines with apoferritin as colloidal ferric hydroxide, and becomes ferritin. . . . A beta globulin called siderophilin binds the ferritin for transport and carries it to the liver, spleen, and marrow for storage. . . . It is not know how the stored ferritin is related to the long-recognized hemosiderin (which makes us all feel better about hemopoietic ignorance).

HBA FOR SECURITY

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by Hospital Benefit Assurance, First Street at Willetta, Phoenix April, 1955

Question QUIZ
Do you know the answers?

Q. Why is it important for a policyholder to have a hospital plan that gives the Right to Renew?

A. Let's assume the policyholder pays premiums monthly. Technically, the policy is renewed once a month. If the policyholder does not have the Right to Renew, the company can refuse renewal by refusing to accept the premium payment, thus depriving the policyholder of any further benefits. This would work a particular hardship on a person developing a recurring illness requiring repeated hospitalization, as he would be unable, because of his recurring condition, to seek coverage from another company for that condition.

Q. Does the HBA Surgical Plan pay benefits for home calls or office calls for treatment of accidental injuries?

A. Yes. HBA surgical schedules provide for treatment of accidental injuries anywhere, provided such treatment is administered within 24 hours after the accident. The HBA does not, however, pay for medical treatment of illness or for non-accident treatment or surgery outside a licensed hospital.

Q. Is there any way I can help HBA speed the payment of my bills?

A. Yes. Send us the filled-in billing form, promptly as you can. Once we receive a bill, we try to send the check within three to five days. All too often, payment is held up for weeks while the HBA Benefit Department waits for the doctor's office to make out and send us his bill. On your bill, tell us the Membership Number of the patient (on the Membership Card); the date and nature of the accident; and what treatment you gave and your fee for that treatment.

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35	396.49
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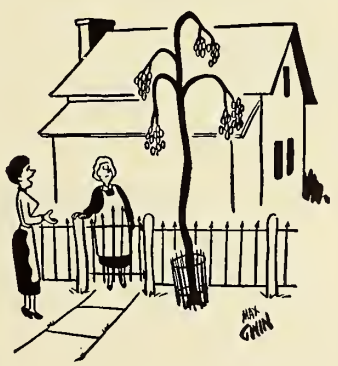
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"I don't know — unless it's the vitamins we've been feeding the dog."

A newly suggested therapy for menstrual cramps is NIACIN. . . . Hudgins found relief in 90% of 220 patients who had been completely incapacitated by the syndrome. He used 100 mg. orally twice a day for 7-10 days before flow. . . . High vitamin, mineral, and protein supplements were basic. Rutin and Vit. C "improved the effectiveness of niacin".

The San Francisco area always seems to have an ANTAGONIST to the use of CASE-FINDING X-RAYS. Roentgenologists, too. . . . In the old days, circa 1940, Stone used to hold up the parade by calling miniature films 'diagnostic', and insisting on $5 to $10 apiece for interpretation. . . . Now Garland deprecates the yield of cancer cases from mass surveys, and says that patients don't go to surgery soon enough anyway and the salvage is too low. . . . Such reasoning would stop progress of any sort, unless one figured that films should be taken MORE often; social service and education would get the patients on the table faster; and more lives would be saved, especially with lobectomy.

C. A. Janda of Tucson received encouragement from his inquiry to 'Queries and Minor Notes' of the J.A.M.A. . . . He suggested that AN AEROSOL OF AMMONIUM CHLORIDE seemed effective in liquefying mucus in cases of chronic bronchitis. The editor agreed that it was worthwhile, especially if one were trying to avoid the bleeding which inhaled 'lytic agents' often cause.

The Journal of the Michigan State Medical Society spreads itself two or three times per year on several aspects of some major topic. . . . In October 1954 they chose DIABETES, and had articles on diabetes and heart disease, surgery of the diabetic, pathogenesis of diabetes (they don't know), and the action of insulin (ditto). . . . Merck's Manual is almost as good, tho not as pleasantly speculative.

One of the most UNUSUAL SOURCES for this column is the 'Office of the President, American Cyanamid Company'. They want us to know that altho Pfizer got a license to make TETRACYCLINE from chlortetracycline, and Cyanamid has to pay Pfizer royalties; that Cyanamid's Lederle can still make "Achromycin" tetracycline; that Bristol and Pfizer are beholden by license to Cyanamid for current manufacture and sale of tetracycline; and that they must pay royalties for the drug made by their present methods. So there. . . . Squibb and Upjohn distribute drug made by Bristol.

HYDROCORTISONE OINTMENTS are being used for almost every kind of skin lesion, but the results in atopic, contact, or pruritic dermatitis are especially good. The drug itself seems to cause no adverse reactions. . . . The addition of antibiotics may help clear infection, and do not seem to interfere with the steroid action.

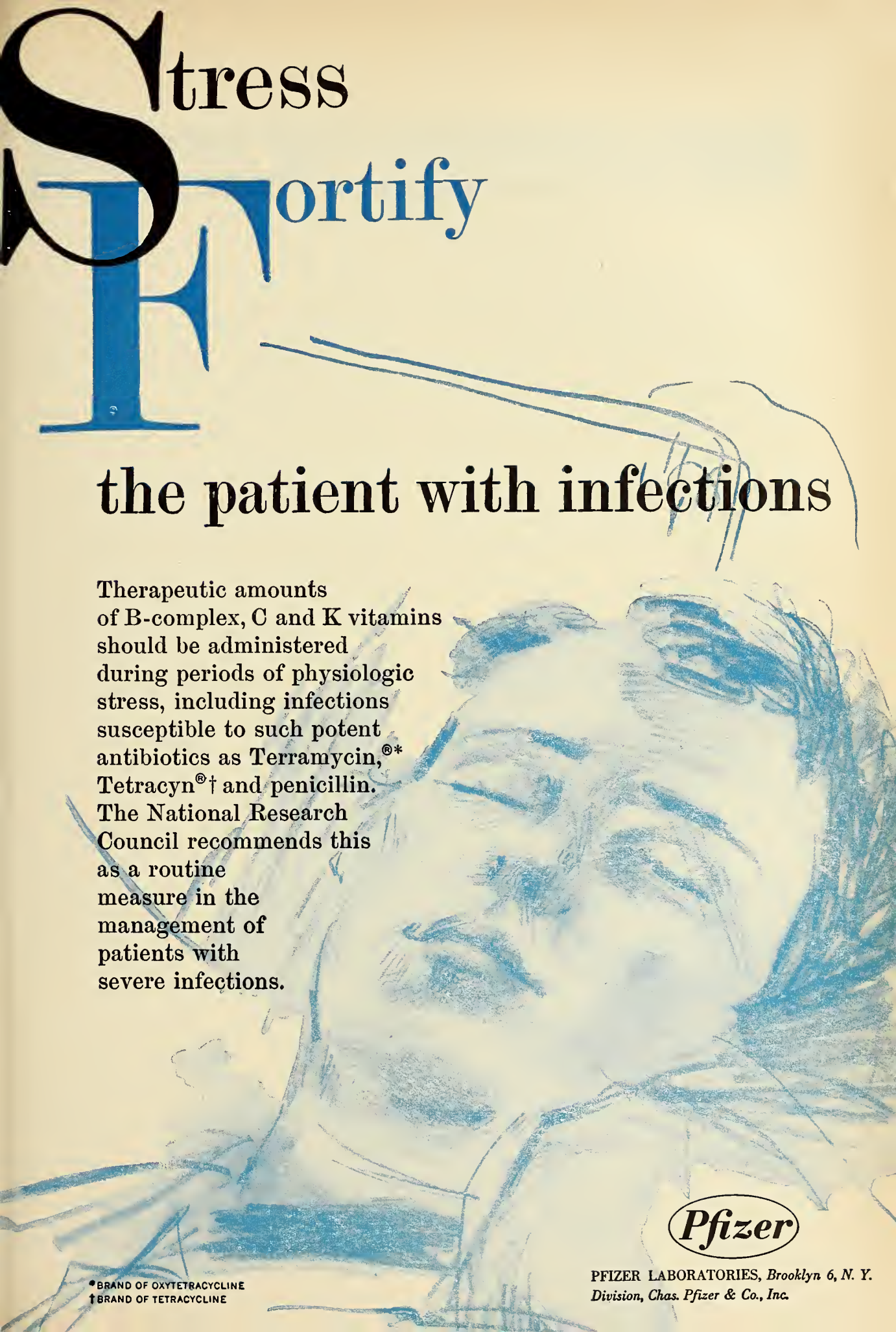
Since the ARIZONA TB & HEALTH ASSOCIATION has joined with other groups to urge the law-makers to modernize the statutes on care of TB, it might be profitable to look at the methods of our neighbors. . . . As has been mentioned here long since, the STATE OF WASHINGTON has had rules for control of the disease for years, and enforced them without too much 'sweat' (or pain). . . . CALIFORNIA has had rules, but has begun to apply them only in the past 3 or 4 years. They have somewhat the same transient and health resort problem there, and it is of huge proportions in the Los Angeles area. The rules include compulsory sanatorium care, or segregation at home, for all active infectious patients. . . . The Los Angeles problem is handled very well by cooperation between the sanatoria and the county and city health departments; by gradual cooperation of the physicians, and especially the chest specialists; by extending the case-finding attempts; and by judicious use of available beds. . . . The placement is handled by a special committee, and works very well. . . . There are 2,500 beds in L.A. County. About 300 are occupied by patients without perfect residence requirements; but the object of 'placement' is to take people in because of either medical or public health reasons. . . . There are a couple of hundred beds for recalcitrant patients, and they usually submit to treatment and edge over into ordinary san care when their sentences are completed. The judges are nearly 100% co-operative in protecting public health. . . . The highest incidence of tuberculosis is found among the routine x-rays of admissions to jail, about 12 to 15%. The second highest (6-8%) is among the relief recipients. L.A. has special facilities for alcoholic TBs. . . . The State of Cailfornia has a 'facility' on Terminal Island for extreme unco-operatives, but it is too small, and the beds are allotted at the rate of 2 per county. . . . They are also building quarters for 100 more beds at each of two Los Angeles locations for segregation of recalcitrants. . . . It is interesting to note that the successful care of such patients is due to the fact that all of the san personnel are also deputy sheriffs. Therapy is suggested and made available to all but, if they refuse it (or food), it is their own business as long as they observe the rules. Very few have refused therapy after the first few months of the present methods.

A recent report on the SCALENUS ANTICUS SYNDROME has recalled one of the most incongruous case we have ever seen. A rancher complained that his hands became numb and functionless before he could complete the milking of a small string of cows. This was embarrassing because he was trying to do the job for his mother, who had been forced to stop milking for the same reason. . . . The case had to be treated with even more discretion than usual because of an even more embarrassing fact, — his ranch raised BEEF cattle, and he would rather be caught raising sheep than milking a cow!

Stress Fortify

the patient with infections

Therapeutic amounts of B-complex, C and K vitamins should be administered during periods of physiologic stress, including infections susceptible to such potent antibiotics as Terramycin,®* Tetracyn®† and penicillin. The National Research Council recommends this as a routine measure in the management of patients with severe infections.



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Organization Page

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

"Certainly your inquiry into the activities of the *volunteer health agencies* is a worthwhile one, because I know from my own experience that we are often remiss in not making our programs completely known to the medical profession which we are *actually organized to serve* in one way or another."

MUSCULAR DYSTROPHY ASSOCIATION OF AMERICA, INC., MARICOPA COUNTY CHAPTER, 4431 North 7th Avenue, Phoenix, Arizona, is dedicated to two fundamental purposes: (1) to raise funds to finance research into the cause of and cure for Muscular Dystrophy; (2) to carry out a local patient care and service program.

(1) *Research*

Until the organization of the Muscular Dystrophy Associations four and a half years ago little research was being done into this and many similar and allied diseases. In these four years the Association has underwritten approximately 65 research projects in 45 medical institutions at a cost of over $1,000,000. "Medical Research in Muscular Dystrophy" is available on request. This list of grants reveals the scope of the research being undertaken and the wide variety of areas of exploration.

The association's Scientific Director has a variety of professional literature regarding Muscular Dystrophy which is available on request to physicians as well as an assortment of professional material for registered physical therapists.

Each year the Association holds a medical conference. Last October in New York city this conference included four symposiums on the research developments and two on various aspects of patient service and medical management. The proceedings of this conference will be published by the *American Journal of Physical Medicine this month as a special issue.* Reprints will be available in quantity shortly after this issue appears. Professional information on developments in research is available and will be sent directly to the requesting physician.

In addition, the Association is preparing for the concentration of certain basic research facilities which are needed. This concentration of facilities will permit the more intensive study of basic problems which will require a laboratory building, equipment and permanent personnel. It will leave free for new work other grantees who can pursue research on a pioneering basis, allowing each man to work according to his interest in special areas of exploration. Thus a *Muscle Research Institute* would be to the general problem of muscle research as the Sloan-Kettering Institute for Cancer is to cancer. One million dollars has already been earmarked for this purpose.

Negotiations are under way to erect a building on a site adjacent to New York Hospital, Cornell Medical Center, New York. The *research will not be limited* to muscular dystrophy. The scope will include other allied diseases; e.g. myotonia atrophica, amyotonia cogenita, amyotrophic lateral sclerosis, multiple sclerosis, myathenia gravis, neuritis, myositis, muscular atrophy subsequent to nervous disorders, muscular atrophy subsequent to diseases of other organs, muscle weakness common to later age groups, rigidity occurring in Parkinson's Disease and the problem of cachexia which accompanies or occurs subsequent to cancer. In fact, the general field of neuro-muscular disorders which affects between three and five million persons in this country today will be considered its proper field of study.

(2) *Patient Service Program*

The Maricopa County Chapter has initiated a program of patient service for victims of muscular dystrophy. Generally, it includes the purchase, repair and rental of wheel chairs, hospital beds, lifts, walkers and other orthopedic devices when prescribed by a physician. It is also authorized to pay for physical therapy treatments when prescribed by a physician. In the past year the Chapter has purchased several pieces of equipment and is now developing a program whereby therapy can be provided for those who

have requested. The medical profession can be of great service in furthering this assistance program by contacting the Chapter when such needs arise and by notifying the Chapter of all patients they are attending so that the Chapter's service can be made available to them.

It is only during the last year that Chapters have undertaken a patient service program so that the precise shape it will take is difficult to anticipate. The Chapters adjust their program, within their authority, to best fit the needs of the patients in their areas, so definitive budgeting for this service cannot be taken until firm patterns emerge. However, as all of the victims of Muscular Dystrophy become familiar with the Chapter and its service the program will accelerate and it is the Chapter's function to make as much such service available as possible to these patients who need assistance.

Perhaps the true essence of the local program is to assist patients and their families toward making life somewhat easier, more comfortable and useful until research does find a cure or control for this ailment.

* * *

ARIZONA TUBERCULOSIS & HEALTH ASSOCIATION, 111 East Willetta, Phoenix, Arizona.

ANNOUNCEMENT
of the
TRUDEAU SCHOOL OF TUBERCULOSIS
for
1955
Forty-first Annual Session

Despite the closing of the clinical facilities of the Trudeau Sanatorium, the forty-first session of the Trudeau School of Tuberculosis will begin Wednesday, June 1st, and continue to June 29th.

The staff, facilities and skills of the Trudeau organization laboratories, of the various sanatoria in the Saranac Lake area, and of the practising tuberculosis specialists of Saranac Lake will be called upon as in the past to present the program.

The course will cover all aspects of pulmonary tuberculosis and also certain phases of other chronic chest diseases, including those of occupational origin.

The schedule for the 1955 course is in preparation but copies of the program for 1954 are available.

Registrations will be limited and it is suggested that those planning to attend make early application for enrollment.

The tuition is $100, payable to the Trudeau School on or before the opening date, June 1, 1955. A few scholarships are available for those individuals who can qualify.

The Trudeau School of Tuberculosis has been approved for training of veterans under Public Laws and any applicant desiring to obtain veteran's benefits should clear his registration with the Veterans Administration before the session begins.

Applications and more detailed information may be obtained through the Arizona Tuberculosis and Health Association, P. O. Box 5155, Phoenix, Arizona.

* * *

"I think you are rendering a splendid service to your readership by explaining the local implications of the programs of the National Foundation, Cancer Society, American Red Cross, and others and I sincerely hope that the material which we have submitted will qualify for publication."

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, INC., 120 Broadway, New York 5, New York, State Office 39 West Adams, Phoenix, Arizona.

The impact of the program of the National Foundation for Infantile Paralysis on physicians and their patients in the State of Arizona as reported in the March issue is clarified by the following statement:

Total contributions from Arizonans to the March of Dimes up to January 1, 1955, came to $1,994,972.24. March of Dimes contributions are normally divided on the basis of 50 per cent remaining with the Chapters and 50 per cent sent to national headquarters. In the event that patient aid costs exceed the 50 per cent which is retained by Chapters, these Chapters draw on the national headquarters. Through the years Arizona Chapters have exercised their right of drawing on national funds to the extent that 69.07 per cent of all funds raised in Arizona have been expended within the state for patient aid — thus, of the gross total raised, only $599,140.71 have been available to the national office for expenditure in the cause of scientific research and professional education. In other words, total advances from national funds have amounted to nearly $500,000.

This advantage in the division of the total re-

ceipts from March of Dimes campaigns is not unique in Arizona. A number of other states in which there has been a continuing high incidence of polio have also expended more than 50 per cent.

* * *

The above quotations are typical of the reactions of volunteer health agencies to the question put to them in the February issue "How does my volunteer dollar affect me personally? How has it affected my patients in 1954? How will it affect us in 1955?"

The quotations from the Muscular Dystrophy Association and the National Foundation for Infantile Paralysis accompanied their letters of transmissal of their contributions in response to the above questions.

Such statements are *real examples* of medicine's fine *public relations* at community, state, and national levels.

AMERICAN COLLEGE OF CHEST PHYSICIANS

THE 21st Annual Meeting of the American College of Chest Physicians will be held at the Ambassador Hotel, Atlantic City, New Jersey, June 1 through 5, 1955. The scientific program will include approximately 200 speakers representing specialists in all aspects of diseases of the heart and lungs. In addition to formal presentations, the program comprises a number of symposia, round table luncheon discussions, diagnostic-treatment conference and motion pictures. More than the usual amount of time has been allotted for open discussion.

A new feature this year will be the Fireside Conferences, to be presented no Friday evening, June 3. At this session more than thirty experts will be present to lead the discussions on as many subjects of current interest in the specialty of diseases of the chest.

Fellowship examinations will be held on June 2, and on Saturday evening, June 4, more than 100 physicians will receive their Fellowship certificates at the annual Convocation which will precede the Presidents' Banquet.

All interested physicians are cordially invited to attend the 21st Annual Meeting of the College; there is no registration fee. Copies of the program may be obtained by writing to the Executive Offices, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

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Notes from the EDITORS PEN

SOMETHING TO PONDER

Indiana, long known as the Hoosier state, also is known for its independent attitude toward federal handouts. For the fourth successive year it has said NO to Washington for most federal aid, subsidy, or give-away programs. Since it adopted this policy in 1951 it is reported to have turned its back on twenty-five million dollars or more. In 1954, for example, the state declined federal money for hospital construction, preventing the building of an armory that it believed was not needed, and stopped a federal housing program. In 1955, more than $16,000 for a federal educational conference has been refused. In 1954, Indianapolis refused federal hospital funds but raised twelve million dollars locally and this same city rejected one and one-half million dollars to remodel the municipal airport.

Indiana's policy began with a declaration of its general assembly in 1945: "Indiana needs no guardian and intends to have none. We Hoosiers — like the people of our sister states — were fooled for quite a spell by the magician's trick that a dollar taxed out of our pockets and sent to Washington will be bigger when it comes back to us. We find that it lost weight in the journey to Washington and back. The political brokerage of the bureaucrats has been deducted. We have decided that there is no such thing as federal aid. We know that there is no wealth to tax that is not already within the boundaries of the 48 states."

AMEF — CONTRIBUTIONS

More than $1,000,000 has been contributed to the American Medical Education Foundation Fund by Life Insurance Companies — the first business group to pass the million dollar mark since inception of the Fund back in 1949.

VOLUNTARY HEALTH INSURANCE

The Health Insurance Council reports that more than 100 million persons, or better than 60 per cent of the population of the United States now have voluntary health insurance. Benefit payments in 1953 exceeded $2.5 billion, an increase of 20 per cent.

A "QUOTATION" WORTHY OF REPETITION

This statement was made by an Illinois colleague in 1882 —

> "The amenities of professional intercourse, and the obligations of medical men toward each other and the public, were perhaps better observed in 1850 than now. Then the doctor, next to the minister, was the trusted friend and counselor of every family to whom he ministered. He shared their joys, soothed their sorrows, and every passing year added to and cemented the attachment of affection between them. Now the doctor is regarded more in the light of a tradesman or mechanic and is employed from the same consideration that a grocer, tailor, or shoemaker is. The strong ties of gratitude and affection have almost ceased to exist. Relationship is now placed upon a mere commercial basis, and for this the profession is more to blame than the public."

MEDICAL EDUCATION AND LICENSURE

Almost 700 medical educators, practicing physicians and members of state medical boards and specialty boards attended the four-day meeting of the 51st Annual Congress on Medical Education and Licensure held February 5-8 at the Palmer House in Chicago, sponsored by the AMA Council on Medical Education and Hospitals, the Federation of State Medical Boards of the U. S. and the Advisory Board for Medical Specialties. Doctor Harry T. Southworth, First Vice President, and Doctor Maurice R. Richter, Secretary-Treasurer of your Arizona State Board of Medical Examiners were among those in attendance.

The Federation of State Medical Boards of the U. S., the Association of American Medical Colleges, the American Hospital Association and the AMA recommended adoption of a program which would put foreign trained physicians practicing in this country on the same level with American trained doctors. Final adoption of the proposed program now rests with the governing bodies of each of the four groups.

Under the plan, foreign-trained doctors, before they could practice in the United States, would have to take an examination in basic medical sciences and major clinical sciences. They would have to have at least 18 years of education, including 32 months in medicine, exclusive of time devoted to what is considered pre-medical or internship training here.

(Continued on Page 180)

The preliminary screening would be utilized to eliminate candidates who do not demonstrate adequate facility in the use of English and who do not give evidence of having reached the level of educational attainment, comparable to that of students in American schools at the time of graduation.

The federation approved in principle a draft of uniform medical practice act which contained recommendations for a definition of the practice of medicine, standards of eligibility or licensure, examinations, reciprocity and endorsement, grounds for probation, suspension, or revocation of licenses and forms for reciprocity and endorsement procedures; and adopted a resolution declaring that "the Federation of State Medical Boards insists on the present standards of educational competence and condemns the policy of appointing interns to hospital positions who are not graduates of accredited medical schools".

OSTEOPATHY — PROGRESS REPORT

On-campus observations of osteopathic colleges under the AMA committee chairmanship of past-president John W. Cline, M.D., San Francisco, is well underway. Colleges in Los Angeles, Des Moines and Chicago, as well as associated hospitals in Columbus, Detroit and Flint have been visited. Kansas City and Kirksville, Missouri, the latter osteopathic school first founded in 1892, were scheduled for visitation the week of February 27th and March 6th respectively.

ANNUAL MEETING — SCIENTIFIC SESSIONS

THE 64th Annual Meeting of your association will be held in Tucson, May 4-7, 1955, with headquarters at El Conquistador Hotel. Through arrangements made by the Scientific Assembly Committee, we are happy to announce participation of the following guest orators who will appear with others on the scientific sessions program.



Paul H. Case, M.D.

Receiving his Doctor of Medicine degree at George Washington School of Medicine in 1934, Doctor Paul H. Case completed a general rotating internship at Kansas City General Hospital and a residency in ophthalmology at the Massachusetts Eye and Ear Division of Massachusetts General Hospital. He is certified by the American Board of Ophthalmology; Fellow of the American College of Surgeons and holds membership in the American Academy of Ophthalmology and Otolaryngology, Pacific Coast Eye, Ear, Nose and Throat Society, American Medical Association, Arizona Medical Association, and Maricopa County Medical Society. Doctor Case is a staff member of St. Joseph's, Good Samaritan and Memorial Hospitals in Phoenix.



Michael J. Hogan, M.D.

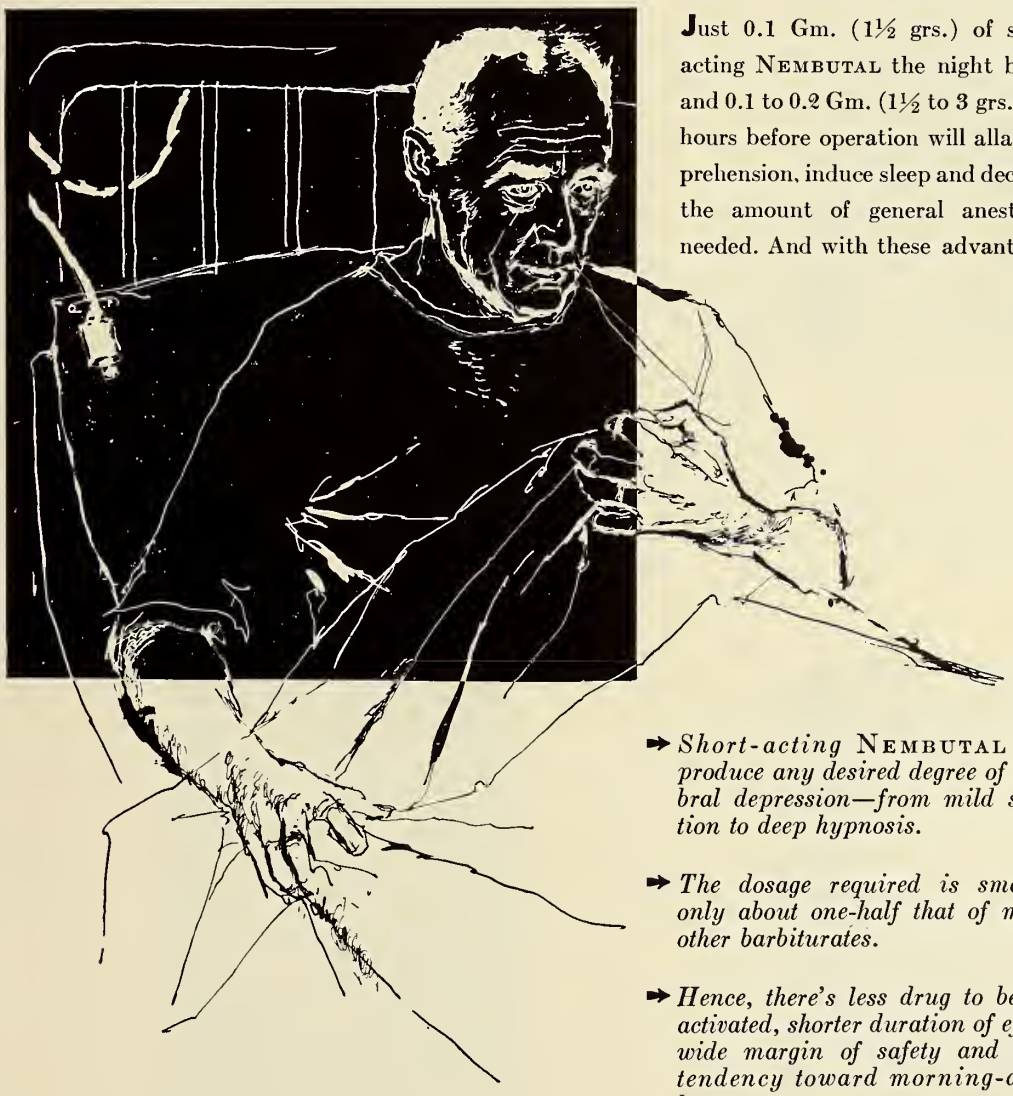
Receiving his Bachelor of Arts degree in 1930 from the University of Utah and his Doctor of Medicine degree in 1942 from Cornell University Medical College, Doctor Michael J. Hogan served a surgical residency from 1933-35, an ophthalmological residence from 1938-40, research in ophthalmology from 1940-41. He was Assistant Clinical Professor from 1946-48 and Associate Clinical Professor from 1948-50 in ophthalmology, and Clinical Professor in Ophthalmology since 1951. He served as Supervisor of Francis I. Proctor Foundation for Research in Ophthalmology from 1948-50 and has served as its Director since 1951. Doctor Hogan is Vice Chairman of the Department of Ophthalmology of the University of California Medical School and is on the staff of the University of California, Franklin and Children's Hospitals. He is the

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author of numerous medical publications and belongs to many local, state and national organizations.



Harry J. French, M.D.

Receiving his Doctor of Medicine degree at Tulane University, New Orleans, in 1920, Doctor Harry J. French completed a two-year internship at Charity General Hospital, likewise in New Orleans. Staff surgeon at Phelps Dodge Corporation hospital, Bisbee, in 1922-35, and engaged in private practice in that locality 1935-42. Entered Wills Eye Hospital, Philadelphia as a resident surgeon in 1942, graduating in 1944. Certified by the American Board of Ophthalmology in 1948, he has been engaged in private practice in Phoenix since 1946.



Oscar W. Thoeny, M.D.

Receiving his Bachelor of Arts degree from the University of Wisconsin and his Doctor of Medicine degree from the University of Minnesota in 1928, Doctor Oscar W. Thoeny completed postgraduate work in ophthalmology at the University of London, Royal Ophthalmic Hospital. Certified by the American Board of Ophthalmology. President of the Arizona Medical Association, past-president of the Maricopa County Medical Society, and former staff president of the St. Joseph's Hospital, Phoenix.



Paul E. McFarland, M.D.

Receiving his Bachelor of Science degree at Bucknell University and Doctor of Medicine degree at Jefferson Medical College, Doctor Paul E. McFarland completed a two-year internship in Pittsburgh, Pennsylvania and a one-year graduate course in ophthalmology at Washington University School of Medicine; also, two years at Wills Eye Hospital in Philadelphia. Certified by the American Board of Ophthalmology. Served five years in the U. S. Army and honorably discharged with the rank of Lt. Colonel.



Robert H. Alway, M.D.

Doctor Robert H. Alway received his Doctor of Medicine degree from the University of Minnesota School of Medicine, 1940. He was associated as a member of the faculty of the University of Utah from 1943 to 1949. In 1949 Doctor Alway joined the faculty staff of Stanford University and remained there until 1952. He has been Professor and Head of Pediatrics at the University of Colorado Medical Centre since 1953 and continues to date.

Interesting Topics

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

NEUROPSYCHIATRY. The July issue of The Nebraska State Medical Journal is a special issue on neuropsychiatry, with ten article on special phases of this important subject. (No, I have not read them. For any one interested "they went that'a way).

KIDNEY DISEASE. Basic Considerations in Management. Howard M. Odel, Rochester, Minn., Journ. of the Iowa State Med. Soc., August, 1954. This is a refreshing treatment of renal disease. By-passing all attempt at classification, the author stresses treatment, "the most practical branch of medicine" and discusses "four fundamental clinical manifestations of renal disease." These are anemia, edema, renal insufficiency and hypertension. Treatment of these conditions for which no specific therapy has yet been discovered requires chiefly patience and resource, but from the viewpoint of the patient, treatment is the most important of the medical art. Well worth a little trouble to look up and read.

DOCTORS AND SMOKING. Rosen, Schmukler and Welkind, Journ. of the Med. Soc. of New Jersey. These authors undertook a research involving the circularizing 5300 doctors practicing in New Jersey, with an elaborate questionnaire concerning their own smoking habits and the observed effects of these. They had replies from 1669 or 32% and present an analyses of these. Most doctors began smoking before 21 years of age. There were 60.8% smokers; 10.7% non-smokers, and 28.5% former smokers who had discontinued smoking. Former smokers increased with the age. The effects of smoking were chiefly in the respiratory tract, cough, postnasal drip, hawking, stuffiness of nose and expectoration. A significant group complained of fatigue as result of smoking. In general, most physicians feel that smoking produces symptoms. The sensory pleasures of smoking play a major part in the continuation of the habit, the greatest enjoyment seems to come in the "smoke" after meals.

HAWAII AND STATEHOOD — Ignorance or Prejudice? This reviewer having been for so long memory runneth not to the contrary, — a firm believer in statehood for Hawaii, was moved to a philosophic indignation over the delaying tactics of the microcephalic politicians in Washington, — by the perusal of the July-August issue of the Hawaii Medical Journal. The excellence of this journal will impress any one who reads it, and one can visualize the highly efficient medical organization which produces it, and back of them the community, industry and interesting fusion of nationalities which make up what ought, by any measurement we choose, to become the "State of Hawaii." It will be so when ignorance and prejudice cease to govern the actions or inactivities of Congress, allowing justice and reason to have their rightful way. A salute to the Hawaii Medical Association and their fine pournal!

GOLDEN JUBILEE OF "THE ANTISEPTIC." The Antiseptic, one of our exchange journals, is published at Madras, India. Its April issue is a very comprehensive volume of some 500 pages containing more than fifty articles. This is only slightly more than one-fourth of the articles contributed by eminent practitioners of India and other countries for the Golden Jubilee of the founding of this truly great journal. Some 125 articles are being held for publication in future issues of the journal. The Antiseptic was founded in 1904 by the now deceased Dr. U. Rama Rau. A son, Dr. U. Krishna Rau, took over the editorship upon the death of his father, and a grandson, Dr. U. Vasudeva Rau, is the present editor of The Antiseptic. "In its very first issue, it (The Antiseptic) envisaged the necessity for a united medical profession, for a General Medical Council for India and for a Medical Registration Act; and today we can congratulate ourselves that we have secured these ideals." This quotation from the "Foreword" editorial by Dr. Sir A. L. Mudaliar, M.D., LL.D., D.Sc., D.C.L., Vice Chancellor of Madras University, sorts the tone for this comprehensive review of the progress of medicine in India and throughout the world during the past fifty years. We add our congratulations to the hundreds received by The Antiseptic from confrers around the world.

PERIPHERAL VASCULAR DISEASE IN OLD AGE. E. J. Wayne, in Brit. Med. Journ., Sept. 25, 1954. More old people die from atherosclerosis and resultant occlusion of an important blood vessel than from any other cause. Treatment of senile obstructive arterial disease is directed towards (1) prevention of skin lesions and of gangrene by the avoidance of trauma, (2) the improvement of the blood supply to the tissues, (3) the relief of symptoms, and (4) the management of established gangrene. These measures are all discussed.

ANTICOAGULANTS IN CORONARY DISEASE. An excellent discussion of this subject by Gilchrist and Tulloch, in Brit. Med. Journ., Sept. 25, 1954. A disease of extremes, acute mycardial infarction runs a treacherous and unpredictable course. Anticoagulant drugs used early and efficiently, and continued for a minimum of four weeks under strict laboratory control, are capable of halving the death rate.

ARIZONA *Pharmaceutical* PAGE

PROFESSIONAL OBLIGATIONS

By Joseph A. Zapotocky, Ph.D.

College of Pharmacy, University of Arizona

A PRESCRIPTION reflects the diagnosis of a disease and the writing of the prescription may be the culmination of hours of examination and clinical testing. It should, therefore, be exact and explicit. The prescription is meant to carry instructions both to the pharmacist and to the patient, and the pharmacist is expected to interpret both of these. He must, therefore, understand the instructions which pertain to him and to interpret for the patient those directions which pertain to the patient. This may appear to be a very simple duty, but, at times, the prescription that seems to be so simple may cause the pharmacist to pause and reflect. Several physicians may write identical prescriptions, yet each physician may except the prescription to be filled in a different manner. As for example, in the preparation of an ophthalmic solution containing atropine sulfate, certan physicians may expect a solution of atropine sulfate in distilled water; some an isotonic solution or a solution made both isotonic and buffered; others a sterile solution; and still others may not be in agreement as to whether the solution should or should not be filtered. A few extra explicit words on the prescription blank can do away with the haze of doubt and permit the pharmacist to fill the prescription to the exact degree of perfection desired.

The pharmacist, during his formal course of education and practical training, becomes well versed in the physical and chemical properties of the drugs he dispenses. He is serving the physician and the patient best when he can make use of this information not only in compounding the prescription but in interpreting the directions of the doctor for the patient. Even if the physician has not already done so, should not the pharmacist again caution the patient about the importance of using water with highly alkaline drugs or with drugs which may form renal calculi though the prescription may contain no mention of water in the directions? Certain drugs are much less effective when taken during or immediately after meals, and if the directions for such a drug reads ambiguously, "two tablets three times daily" isn't it the pharmacist's duty to point out to the patient the advisability of taking such drugs on an empty stomach?

Does the pharmacist carry out his professional obligations if he merely copies the directions of the physician on the label without any comment about some property of the drug which modifies the effectiveness of that drug? Correct use of the drug will help to prevent doubts in the mind of the patient as to the accuracy of the diagnosis or the correct preparation of the drug when expected results are not forthcoming. Such information is just as important as advising a patient to store certain heat labile products in a refrigerator.

A number of drugs may cause coloration of the urine or skin, and the patient who has not been warned that his urine will turn red is in for quite a shock. If the patient has not been apprised of this fact, is it not the duty of the pharmacist to reveal this property to the patient and to stress the point that it is a normal effect of the medication? In conjunction with this line of thought, should not the pharmacist also caution the patient to report to the physician certain signs which may indicate toxicity?

The pharmacits is often referred to as the link between the physician and the patient. His special knowledge of drugs, if properly used, can add strength to this bond. Even today, when less than twenty per cent of the prescriptions require compounding, the pharmacist can still exhibit a great deal of professional skill if he has received the confidence of the physician.

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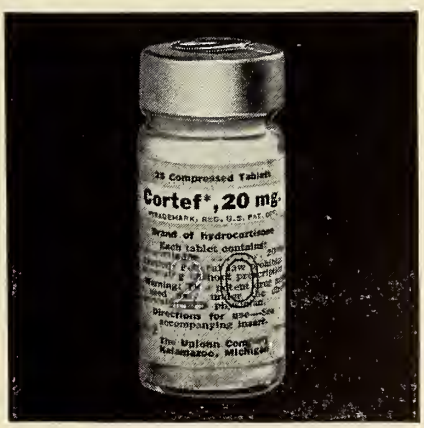
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Woman's AUXILIARY

History of the Woman's Auxiliary To The Arizona State Medical Association 1950-1955

Mrs. George S. Enfield, State Historian

THE PAST five years have brought us to our Silver Anniversary Year, 1955, and have added a great many new and worthwhile achivements to the history of the Woman's Auxiliary to the Arizona State Medical Association.

The number of organized counties, which stood for many years at three, then four, during 1951-52 rose to seven with the formation of auxiliaries in the counties of Graham, Pinal and Yuma. This was accomplished by the personal contact established through visits made by the state president, president-elect and organization chairman.

At the end of 1953, Graham County Auxiliary, which had started out so bravely and enthusiastically with the full support of their Medical Socicty, expired due to lack of numbers — their seven possible members having dwindled to four. However, during their brief span of activity they did a fine job of public relations and health education and as members-at-large are still carrying on.

Pinal County withdrew as an organized group in May 1954, because their membership of 12 was so scattered throughout the county that it was difficult to function as a unit. They also left a fine record of achievement and we hope that they will reorganize when they have more eligible members.

Yuma County has an enthusiastic group of 21 members, several of whom are active on the state board. They have done splendid PR and health education work in Audiometer testing, nurse recruitment and future nurses clubs. They also made the National TODAY'S HEALTH "More Exclusive" club in 1954 by overselling their quota by 269%. A wonderful record for a new auxiliary!

The four "old" auxiliaries, Maricopa, Gila, Pima, and Yavapai have carried on their work each year showing ever-increasing progress in all phases of the auxiliary program.

Our membership during the past five years has risen steadily from 347 in 1950 to over 470 in 1955. The wives of doctors in unorganized counties have been encouraged to join us as members-at-large. In order that they might be kept informed about the auxiliary and its work and thus feel that they were a part of the group, a NEWSLETTER was published for the first time in 1951 by the state organization and membership chairman. Three issues of one hundred copies each were sent to these women only. The following year the state board voted to send the NEWSLETTER to every doctor's wife in the state, the national auxiliary officers and to presidents of other state auxiliaries. Seven hundred copies of each of the three yearly issues are now mailed. The newsletter was christened "THE MAIL BOX" in 1955.

The House of Delegates of the Arizona Medical Association, in 1951, raised their financial grant of $500 to $1,000 yearly to underwrite the Auxiliary's increased public relations and health education program, thus demonstrating their approval of and cooperation with our fight against Socialized Medicine and adverse Medical Legislation, or Nurse Recruitment and Health Radio Programs and other projects.

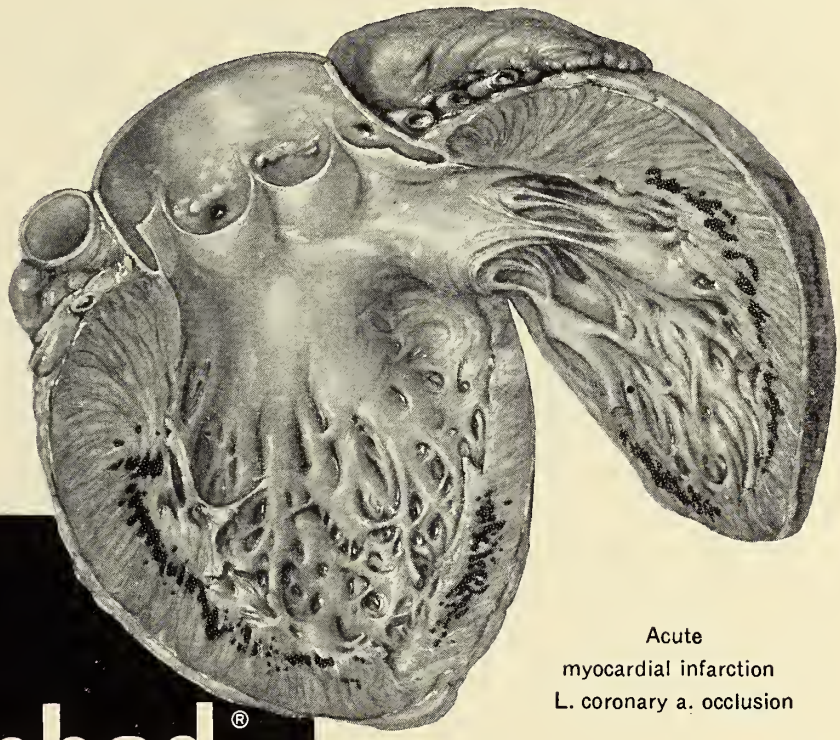
For the past four years we have paid the way of the president-elect to the national conference in Chicago and that of the president for the past two years. It has been felt that the money was well spent since the ideas and inspiration received by them at conference from the national officers and other state auxiliary officers is later transfused into our own state groups.

The Student Nurse Loan Fund, which was established at the 1949 convention, granted loans to the first two girls in 1950. In the past five years 22 girls have received the loan, six of whom have graduated and fully repaid the amount borrowed. This fund is now able through the dollar per year per member, to increase, not only the number of loans granted each year, but also the amount of the loan from $300 to $400 in line with the increased cost of nursing education. The planners of this loan fund did a masterly piece of work. The format has been used as the pattern for many similar loan funds in other state auxiliaries and lay organizations.

The formation of Future Nurses Clubs has been wide-spread throughout the state follow-

—in the severe shock 60 50

secondary to myocardial infarction



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myocardial infarction
L. coronary a. occlusion

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1. Gazes, P. C., Goldberg, L. I., and Darby, T. D.: *Circulation*, 8: 883, Dec., 1953.

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ing the beginning of the intensive Nurse Recruitment Program in 1951. Clubs in elementary and high schools help to acquaint young girls with the opportunities of a nursing career and with the need for trained nurses. The nurse recruitment program has helped to increase the enrollment in the three accredited nursing schools in the state and to interest a higher type, better educated girl in taking up nursing as her life work. In 1954, a joint committee consisting of members from the state nurses association and the state medical auxiliary was formed. This committee makes it possible for a fine and united program to be carried on throughout the whole state.

In 1954, we were urged by national to give special attention to the mental health problem in our community. Maricopa County's mental health chairman was asked to sit in on a planning committee which set-up the Maricopa Mental Health Association. A child guidance clinic was started by this group and the Maricopa Auxiliary raised $2,852.50 toward its support in 1954-55. Tucson has had a child guidance clinic for three years and many of the Pima auxiliary members are volunteer workers in it.

Civil Defense and American Medical Education Foundation have been actively helped by members of the auxiliary. However, they should both be given a more important place in our planning since the one has the safety of our future lives as its goal and the other the future freedom of our medical schools. Both are of utmost importance to the doctor and his family.

Pima county has sponsored a children's health radio program called "Healthy Living in our Country" for four successful years. The electrical transcriptions furnished by the educational burea of the AMA have been furnished to radio stations in several counties.

All counties have given generously each year to the various health and welfare drives. Yavapai county raises several thousands of dollars each year at their Christmas Ball for their county hospital. The doctor's wife is ever ready to help when called upon to serve her community.

TODAY'S HEALTH subscriptions in Arizona have reached a new record every year. In 1954, a high of 468 subscriptions or 643 points boosted us into first place among the states that have 400 to 1000 members. A $40 check was presented to our president at the 1954 AMA convention in San Francisco.

The Bulletin has not fared so well in the past five years. Only 82 subscriptions were sold in 1954. This magazine is a MUST for all officers and committee chairmen, as it is a source book on the "know how" of her job.

The State Constitution was revised during 1953-54 and was accepted at the general session of the 1954 convention in Chandler. It was printed in early 1955.

A school in instruction was held for the first time at the 1954 convention and will be held again at the 1955 convention. A manuel of important information was compiled for this meeting by the program chairman and president. This will be added to from time to time to keep it up-to-date as a working manuel for our state officers and committee chairmen.

Arizona auxiliary was presented a state president's pin by Mrs. William Schoffman at the end of her year in office (1953). It is a silver shield in the shape of the state. It first was inscribed with only the letters AMA but in 1954 it was decided to have the full name "The Woman's Auxiliary to the Arizona Medical Association" inscribed around the state plant, a Sahuaro cactus. This beautiful pin is passed from president to president.

The members of the Woman's Auxiliary to the Arizona Medical Association can be very proud to have had a part in its splendid growth. Our progress and achievement during our 25 years stands up well in comparison with larger groups. Let us continue to keep it that way and may the next 25 years be even better than the 25 just passed.

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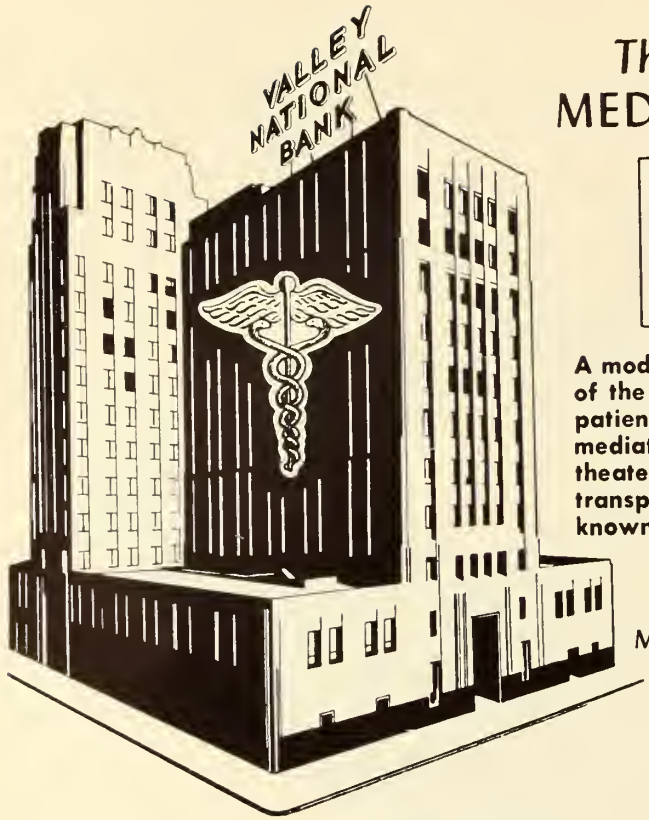
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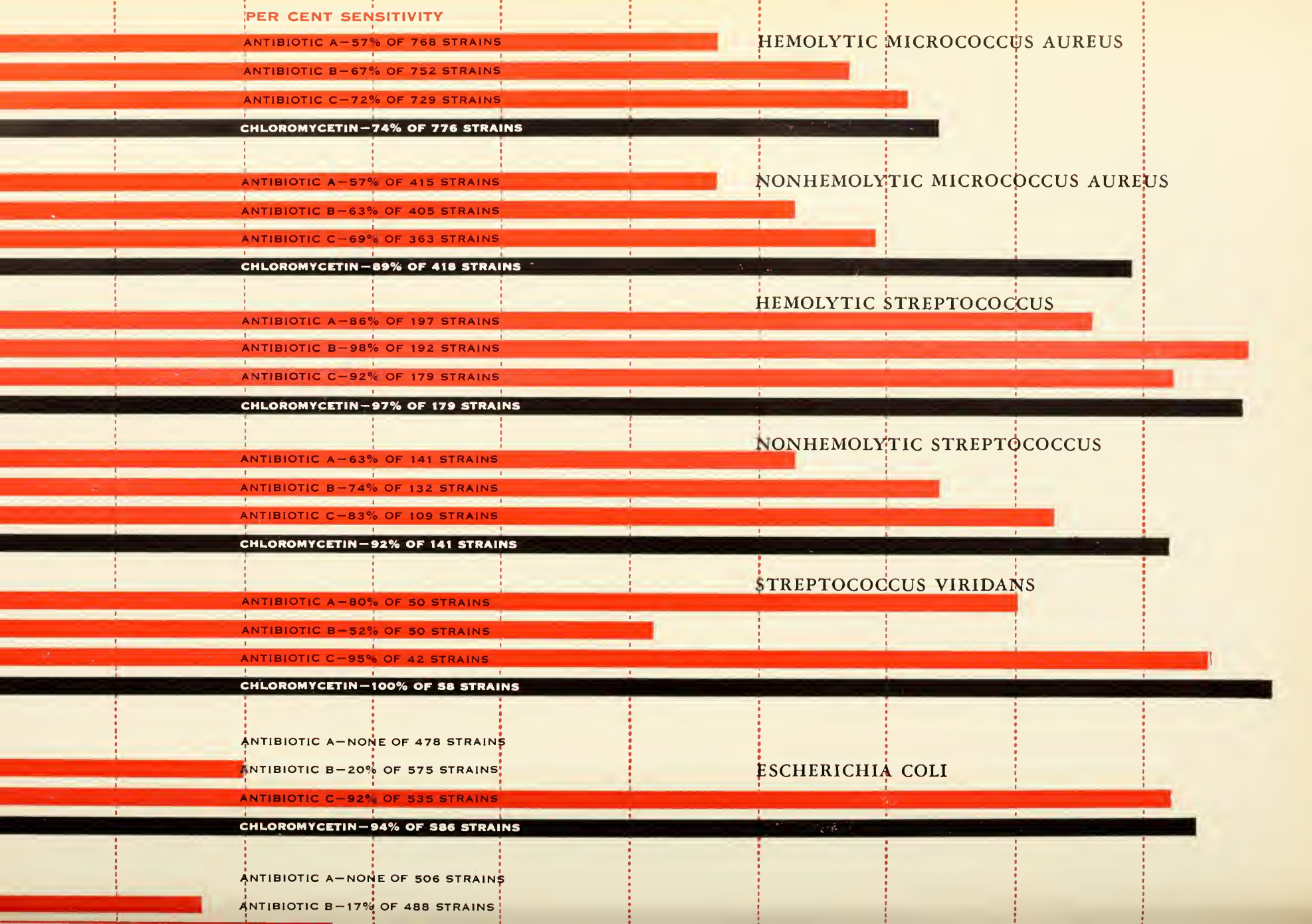
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CHLOROMYCETIN—74% OF 776 STRAINS
NONHEMOLYTIC MICROCOCCUS AUREUS
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ARIZONA MEDICINE
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Original ARTICLES

PROBLEMS IN THE TREATMENT OF REFRACTORY CARDIAC FAILURE

By Dr. John F. Currin
Flagstaff, Arizona

THE majority of cases of cardiac decompensation respond favorably and easily to a regime of digitalis, salt restriction and various diuretics, usually, one of the mercurials. However, there are a certain number of patients who fail to respond to therapy. This failure of response is noted most commonly in those patients who have been on treatment for some time. They usually have responded initially to treatment but after a period of time dyspnea and edema recur and defy the usual medical management. These patients present certain therapeutic and pharmacological problems, the solving of which may return the patients to useful lives again.

The lack of initial therapeutic response of the patient with frank congestive failure should sound a warning as to the etiology of the failure. (a) High output failure, i.e. thyrotoxicosis, beriberi, anemia, cor pulmonale, Paget's disease, arterio-venous fistula; (b) constrictive pericarditis; (c) an acute myocardial process such as rheumatic fever or lupus erythematosis. Congestive failure in these states will not respond unless the underlying disease is treated.

An evaluation of the proper amount and type of digitalis preparation may be of major importance in restoring compensation to the refractory patient. Many of the patients have been on "cook-book" dosage of digitalis for months to year. Often the dosage is too large, especially in the elderly patient. Digitoxin is the most popular digitalis preparation in use at the present time. It is generally stated that the digitalizing dose of digitoxin is 1.2 mg. The actual dose required for initial digitalization varies from .9 to 4.8 mg. according to DeGraff and his associates who found that the dose of 1.2 mg. actually digitalized only 17% of patients; therefore the dose of all digitalis preparations, digitoxin in particular, is a highly individualized affair.

Over digitalization can be the cause of increasing cardiac decompensation. This is often accompanied by premature ventricular contractions arrhythmias and various degrees of heart-block. With digitoxin there are often cardiac signs before nausea, vomiting and ocular difficulties supervene. Therefore despite increasing congestive failure it may be necessary to withdraw the digitalis. The speed of elimination of digitalis preparations differ markedly. It may take 10 to 14 days to eliminate a toxic dose of digitoxin. A toxic dose of digoxin, on the other hand, may be eliminated in 36 to 48 hours. Therefore the type of digitalis preparation is important in assessing how long the patient will be off the drug.

Certain patients develop toxicity to digitalis easily and these must be maintained in one of the less familiar preparations. Digoxin is rapidly eliminated. This has the advantage of making digitalis intoxication difficult but often makes complete digitalization difficult. Gitalin — at the moment — with uniform potency and easy absorbability, appears to be the best digitalis preparation for these easily toxic patients. It contains the widest therapeutic ratio.

° Presented before November 1954 staff meeting of Flagstaff Hospital, Flagstaff, Arizona.

In summary then, overdigitalization must be considered in the refractory cardiac patient and if found to be present the drug must be discontinued until all evidence of overdigitalization is no longer present. The proper digitalis preparation must be used and the dose individualized.

Another important consideration in evaluating the refractory patient is the state of the electrolyte balance. The refractory patient has usually been on a low sodium diet and diuretics for a prolonged period. This often leads to considerable abnormalities in the patient's electrolytic and fluid balance. The three electrolytes of primary importance are sodium, potassium and chloride. Sodium is the principle extracellular cation. It is of importance in maintaining osmolarity of extracellular fluids. Many patients who have been on restricted diets and mercurial diurctics develop the so-called "low salt syndrome". In this condition, weakness, apathy, elevation of urea, hematocrit and diminution of extracellular fluid volume occur. The urinary output usually remains adequate until late in the illness. This chain of events increases the congestive failure and the patient fails to show any improvement from diuretic therapy, which actually may make the patient's condition even more hazardous. Recognition of the low salt syndrome is important. It can often be surmised by the chain of events preceding it. The blood sodium is reduced and the urea begins to rise. Testing of the urinary chloride may be helpful but this has drawbacks which will be discussed later.

Treatment of the low salt syndrome is the replacement of sodium. This can be done with the mildest cases by institution of a regular diet without sodium restriction. The more severe cases often require intravenous hypertonic 5% saline solutions. The amount to be administered can be calculated from the formula: 145 minus the blood sodium in milliequivalents, times 20% of the body weight in kilograms, divided by 85.5 times 100 — which equals the number of cc's of 5% sodium chloride to be given.

Restoration of the blood sodium to normal level often allows the patient again to have an adequate diuresis after mercurial injection. Rarely the patient, while giving lip service to a low salt diet, refuses to follow it. This is easily determined by questioning; therapy is simple, but more in the province of a doctor-patient relationship than in the field of therapeutics.

Hypopotassemia has a severe electrolytic complication, often making the cardiac patient most refractory to therapy. Potassium is the main intracellular cation. This state may arise in one of two ways. Prolonged diuresis with mercurials often leads to potassium diuresis along with other electrolytes, or by itself. Also, as a further complication of the low sodium syndrome, potassium may leave the cell and enter the extracellular compartment in an attempt to preserve osmolarity of the extracellular compartment. It is then excreted in the urine.

These patients often develop severe muscle weakness, paralytic ileus and apathy. Electrocardiographic changes are evidenced in this state and sudden deaths are not uncommon. Digitalis intoxication occurs very easily in the hypopotassemic state and may be corrected by potassium therapy. The addition of potassium is the treatment of this condition. This may be done most easily by allowing the patient to drink a quart of fresh orange juice a day. In the more severe states it may be necessary to give potassium salts, either potassium chloride 2 grams 3-4 times a day or the buffered phosphate salts in the same dosage. In critical cases, 20 to 40 milliequivalents of potassium chloride may be given intravenously, slowly in an infusion of glucose with water.

Another important electrolyte to be considered is the chloride. Prolonged diuretic therapy associated with a low salt diet often leads to hypochloremic alkalosis. When the plasma chloride falls below 90 milliequivalents, dieuresis will not occur after mercurial therapy.

Often associated with hypochloremia are severe alkalosis, tetany and a low serum potassium. Diagnosis can be made by examination of the serum chloride, and urinary chloride. The latter is a simple examination: to 10 drops of urine add 1 drop of potassium dichromate indicator, and then drop by drop add .73% AGNO 3 until there is a color change. The number of drops measures the number of grams of chloride. Three or less indicates a low chloride. At one time it was felt the measure of chloride in the urine also measured the sodium in the urine. It is now known that this is not necessarily true. Patients, especially after a diuretic therapy can excrete sodium in the

urine without chloride and vice-versa. The treatment of this condition is the addition of chloride, usually as ammonium chloride. This can be given by mouth: 4-10 gm. a day or 150-200 cc. of a 2% solution slowly, intravenously. Rarely, for the patient unable to take ammonium chloride, dilute hydrochloric acid can be given by mouth. For years it has been known that ammonium chloride can "potentiate" the action of mercurial diuretics. It is probably effected by correction of a low serum chloride.

Another major consideration making a cardiac patient refractory to therapy is repeated pulmonary infarctions. Many studies have revealed that venous thrombosis is a common complication of cardiac failure, probably as a result of stasis of the circulation. It has been reported in one study that 29% of autopsies reveal pumonary emboli. Repeated bouts of pneumonia, chest pain and "bronchitis" in a cardiac patient suggest the possibility of repeated small pulmonary infarctions. These recurrent infarctions are not well tolerated by the cardiac patient and may accelerate the downhill course of his illness.

Despite the correction of the above factors, many patients show a progressive decline and are slowly approaching the termination of their disease. However, several new drugs and diuretic regimes offer a hope of prolonging these patients lives. Diamox, a carbonic anhydrase inhibitor, prevents the tubules of the kidney from reabsorbing sodium by blocking the enzyme carbonic anhydrase. It has been reported to give good results in some cases. It is administered in the dosage of 500 mgm. 1-4 times a day. It can be given by itself or in a routine of diamox, as above for 2 days, 6-9 gm. of ammonium chloride a day for 2 days, followed by murcurial diuretics. After a day's rest the routine can be repeated. Diamox has the disadvantage of also allowing the excretion of potassium and therefore, added potassium must be given the patient.

The patient who has been on daily or every other day mercurials by injection or by mouth often needs a 10 day to two week period off the drug. Quite often this, and correction of previously mentioned abnormalities may allow the patient again to respond to therapy. Aminophyllin therapy intravenously in the morning and evening before and during the day of mercurial injection may increase the response of the diuretic in some people by increasing the renal blood flow. Attempts have been made to render the patient highly acidotic by large doses of ammonium chloride orally or intravenously prior to mercurial therapy. This appears to allow massive diuresis in some patients.

In summary, many of these patients with refractory cardiac failure are patients who are reaching the termination of their illness. Often however, the correction of one or more of the above defects will allow compensation to be restored, and a useful life returned to the patient.

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CAT SCRATCH DISEASE

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CAT Scratch Disease is characterized by an initial cutaneous lesion at the site of a cat scratch, followed by regional lymphadenitis and systemic symptoms.

Lymphadenitis, accompanied by fever, following a cat scratch, was first recognized in 1932 by Dr. Lee Foshay. He referred to it as Cat Scratch Fever. Others,(1, 2, 3, 8, 11, 13) since 1950, have described it as Benign Virus Lymphadenitis, Non-Bacterial Regional Lymphadenitis, La Maladie des Griffes De Chat, Felenosis.

The following case is reported to emphasize the fact that Cat Scratch Disease is not uncommon and that it is a systemic disease of viral etiology primarily involving the lymphatic and reticuloendothelial systems. This is the first case reported wherein bilateral axillary adenopathy, mesenteric adenopathy, and splenomegaly were observed:

Case Report

The patient, a 17 year old white male, presented himself for examination because of a mass in the right axilla. Two months prior he had a febrile illness of moderate severity accompanied by malaise, lethargy and drowsiness. The temperature elevation last about five days. Thereafter, he noted that there was a small mass in the right axilla. During the subsequent two months it had grown to the size of a large orange and was obvious to the casual observer. The axillary mass was not painful.

The patient denied any contact with rabbits. However, he stated that there were two large cats at home. He handled the cats daily. On numerous occasions he had suffered many scratches on both hands while playing with and teasing the cats. He paid little attention to these scratches for they healed without apparent incident.

Physical examination revealed a well-developed, well-nourished white male who did not appear ill. His temperature was normal; pulse was 76; respirations 16; and blood pressure 122/76. The scalp was clear; the eyelids and and conjunctivae were normal; both pupils reacted to light and accommodation. The ears, nose, and throat revealed no abnormality. The chest was clear to percussion and auscultation. The heart was normal. The abdomen was scaphoid, not tender; no masses could be palpated. The edge of the spleen was barely palpable. The liver did not appear to be enlarged on palpation or percussion. Neurological examination was normal. The skin revealed no evidence of any generalized eruption. There were numerous linear crusts and excoriations in various stages of healing over the dorsum of both hands. Examination of the lymphatic system revealed the nodes of the anterior and lateral cervical chain to be slightly enlarged. In the right axilla there was a mass the size of an orange. The overlying skin was not red or tender. Deep palpation of the mass elicited moderate tenderness. The mass was not adherent to the overlying skin. It was firm with no evidence of fluctuation or suppuration. There was no lymphangitis. There was a similar mass in the left axilla the size of a golf ball. The overlying skin was normal.

X-ray of the abdomen was reported as showing a definite enlargement of the spleen and an enlargement of the mesenteric nodes with pressure on the duodenum. X-ray of the chest revealed a bilateral hilar adenopathy.

The white blood count was normal. The sedimentation rate was normal. Heterophile agglutinations were normal. Skin tests for coccidioidmycosis, tuberculosis and histoplasmosis were normal. Serologic test for syphilis was negative.

Biopsy of the axillary gland was reported as consistent with the diagnosis of Cat Scratch Disease. This was confirmed by a positive intradermal reaction with cat scratch antigen. Two other members of the family, who had frequently handled the cats and suffered scratches, gave a positive reaction. The fourth members of the family, who did not handle the cats, gave a negative skin test.

Discussion

The first published report of this disease emanated from Debre in France in 1950, who first learned of the entity after a visit with Fo-

shay in 1947. Debre(1, 2) named this disease "La Maladie des Griffess de Chat." The first case described in the American literature was published in 1951 by Greer and Kiefer(3). With the preparation of an antigen by Hanger and Rose, from aspirated pus from a suppurated regional lymph gland, other variants of this disease were soon discovered. Thus, Cassady and Culbertson(4) in 1953 reported that Parinaud's oculoglandular syndrome is a manifestation of Cat Scratch Disease. The conjunctiva is the site of the primary infection, resulting in a conjunctivitis with granulation, followed by regional lymphadenitis. Cat Scratch Encephalitis(5), particularly in children, has also been reported.

The virus causing Cat Scratch Disease has been isolated (Mollaret)(6, 7). Contact with a, cat, most commonly through a scratch, is invariable. The cat itself is not sick. The cat apparently acquires the virus through ingestion. Cats act purely as passive carriers of the virus.

The initial lesion is usually on the unclothed area of the skin. The arms, face, neck, and the legs are the most common sites of inoculation. Several types of primary lesions have been noted. These may be an inflamed scratch or one covered with a scab or a raised reddish-brown or rose colored papule. At times the initial lesion may simulate an insect bite, or an indolent furuncle. The initial lesion may be solitary or multiple in the form of an ulcer, scab, crust or papule surrounded by a vesicle.

The time interval from inoculation to primary lesion varies from three to seven days. The interval of the appearance of regional lymphadenopathy may be from 18 to 42 days. Lymphangitis is absent.

The lymph nodes most commonly involved are those of the axilla, the epitrochlears, the anterior and posterior cervical chains, the supraclavicular, submental, submaxillary, preauricular and occipital glands. When the femoral nodes are involved, it may simulate lymphogranuloma inguinale. The enlargement of the regional nodes is so striking as to be the major factor which is brought to the attention of the physician. The size of the regional adenopathy may be from that of a golf ball to an orange. The glands may be rubbery, non-tender, moveable, or fixed. Often they are tender with redness, heat and swelling of the overlying skin. Suppuration with sterile pus, sinus tract formation and fibrosis is not uncommon.

Although the disease is a systemic one associated with malaise, fever, anorexia, nausea, weakness, lassitude, aching, chilly sensation, or headache it may be so mild as to be completely unnoticed except for the regional adenopathy. Some patients have an erythematous maculopapular or morbiliform eruption associated with the disease. The rash, when present, lasts but about two days. Fever is usually mild, but may be up to 104°. The duration of the fever may be from three days to five weeks, depending upon the degree of suppuration. The absence of fever usually signifies lack of suppuration of the regional lymph gland. Splenomegaly has not been previously reported. Coma and convulsive seizures, particularly in children, indicate that the disease is complicated by an encephalitis.

Cat Scratch Disease must be differentiated from tularemia, infectious mononucleosis, tuberculous adenitis, Hodgkins disease, lymphosarcoma, lymphogranuloma venereum, Parinaud's oculoglandular syndrome caused by other organisms, and encephalitis due to other causes. The epitrochlear and axillary forms may simulate ulceroglandular tularemia. The cervical form may be confused with tuberculous cervical adenitis. When suppuration is not present, the adenopathy may resemble that of infectious mononucleosis, Hodgkin's disease, or lymphosarcoma. The inguinal form may simulate lymphogranuloma venereum. The ocular type may give rise to a typical Parinaud syndrome. An anginous type consisting of a unilateral pharyngeal abscess with suppurative lymphadenitis and arthralgia resistant to therapy, has been described.

Mesenteric lymphadenopathy may occur, resulting in an operation for suspected appendicitis. A meningoencephalic form has been noted. A pulmonary type similar to an atypical viral pneumonia has been described.

The laboratory findings in Cat Scratch Disease, other than the specific intradermal test, are not striking. There may be a leucocytosis or normal white count. The sedimentation rate is usually elevated. Cultures of pus from the enlarged nodes remain sterile on ordinary media; cultures for fungii and tubercle bacilli are negative. Agglutinations for tularemia are negative. Heterophile agglutinations are within normal limits. Serologic tests for syphilis are

negative. Frei intradermal tests are negative. The serum globulin may be elevated early in the disease. The only characteristic laboratory procedure is the positive intradermal action with Cat Scratch antigen. The antigen is prepared from macerated suppurated lymph nodes removed on biopsy. Because there is a limited supply of such material, cat scratch antigen is difficult to obtain. The intradermal test is specific.

Although the microscopic pathological picture is not diagnostic, it is characteristic enough to suggest the probable diagnosis which can be confirmed by the intradermal test.

There is no specific therapy for Cat Scratch Disease. Sulfonamides, penicillin and streptomycin are ineffective. The broad spectrum antibiotics may shorten the course of the disease.

Summary

Cat Scratch Disease, a new clinical entity, is a systemic infection of viral etiology, affecting the lymphatic and reticuloendothelial systems, and characterized clinically by an initial cutaneous lesion at the site of an inoculation, most commonly a cat scratch, and enlargement of the regional nodes which may suppurate with formation of sterile pus. Fever and other systemic symptoms of variable degree and duration accompany the lymphadenopathy. The disease is common. The diagnosis when suspected may be proven by a positive intradermal skin test with an antigen made of the involved macerated lymph node. Although meningoencephalitis and other severe forms of this disease have been described, the course is usually benign and self-limited. Broad spectrum antibiotics may be helpful. It is important to differentiate this entity from those having a more serious prognosis, such as tuberculosis, lymphogranuloma inguinale and neoplastic disease.

Acknowledgement: The author is indebted to Dr. Lee Foshay for supplying him with the cat scratch antigen.

Addendum: The Committee on Standard Nomenclature of Diseases and Operations has recently adopted "Nonbacterial regional lymphadenitis (Cat Scratch Disease)" as the official designation for this disease.

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DIARRHEA WITH DEHYDRATION IN INFANTS

A simple treatment

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Gastro-enteritis, or, more specifically, diarrhea, has always been the scourge of infants in the summer months in Arizona, and is probably the chief cause for the discouragingly high infant mortality rate of the state. Not only is it very common, but it is often very severe. The high climatic temperatures add to the usual difficulty in achieving and maintaining a proper state of hydration in the ill infant.

Maricopa County Hospital has been organized as a separate general hospital for only about seven years. In the early years of its existence, the hospital had few if any internes, and an insufficient numbers of nurses and attendants. The laboratory facilities were wholly inadequate. (These deficiencies have been corrected in the last few years).

In the past seven years, roughly a thousand cases of severe diarrhea and dehydration have been cared for in the pediatric department of the Maricopa County Hospital. Until 1948, there was no organized routine for the treatment of diarrhea in infants. The published methods of treatment could not be used because of the lack of laboratory facilities and of people to carry out the treatment. During those early days, there were from 10-20 deaths per month among the infants admitted with diarrhea and dehydration. Many of these deaths occurred after days and even weeks of somewhat haphazard treatment.

It became obvious that a simple routine method of treatment (one that could be handled by the nurses) had to be evolved. The method to be discussed was worked out, with very gratifying results. The death rate dropped to one or two a month. Of those who died while this treatment was being used routinely, almost all died within 24 hours of admission and most of them within six hours. Many died before any treatment could be instituted. Under the following treatment not only did the mortality rate drop, but also the morbidity rate. The babies were well and out of the hospital in 1-2 weeks instead of the 2 weeks to 2 months which was common before.

Given before the "Gold-Headed Cane" clinical club in Phoenix, Arizona on April 21, 1955.

Many of the smaller hospitals of the state are now in the same situation that Maricopa County Hospital was in during its early days, with inadequate laboratory facilities and insufficient help. This treatment is presented, therefore as a proven, simple treatment, requiring no laboratory work and a minimum of nursing care.

OUTLINE OF TREATMENT

First 12-24 hours

1. Nothing by mouth except medication and enough sips of 5% glucose solution to keep the baby quiet.

2. Routine medication
   Streptomycin 2 Grams
   Cremosuxidine 150 cc., (any similar non-absorbable sulfa, kaoline and pectin mixture may be used.)
   Dosage: Under 6 mos.: 1 tsp. every 4 hours
   6 mos. to 1 yr.: 2 tsp. every 4 hours
   Over 1 year: 3 tsp. every 4 hours.

3. Intravenous Fluids — Best given by the old Salvarsan set-up of a large, open mouth graduated burette with the usual tubing, drip-meter and needle.
   a. 5% glucose solution, sufficient to get the IV started, then
   b. Plasma or serum albumin — 10 cc. per pound of estimated undehydrated weight. Given at 10-30 drops per minute, and followed by enough
   c. 5% glucose solution to wash out the tubing and then by
   d. Lactate-Ringer's solution — 5 cc. per pound of estimated undehydrated weight. Given at 10-30 drops per minute.
   e. Discontinue IV.

4. Sub-cutaneous fluids
   Lactate-Ringer's solution containing 1 cc. of B-Complex solution (injectable) per 250 cc. Given as a continuous sub-cutaneous injection with no restriction or flow and no hyaluronidase.

5. Other anti-biotics
   No absorbable sulfa — is given until the baby

is hydrated. If parenteral infection exists, any other anti-biotic may be given.

Second (and perhaps third) day: Diarrhea less.

1. Plasma or albumin — 10 cc. per pound given IV. If the baby is anemic, whole blood — 15 cc. per pound may be given instead of plasma or albumin.
2. Continue routine medication.
3. Continue Lactate-Ringer's solution sub-cutaneously until baby is hydrated.
4. Appella Powder — 1 tbsp. to 3 oz. water given by mouth every 3 hours.

Third (or fourth) day: Diarrhea stopped, baby hydrated.

1. Probana Powder — 1 tbsp. to each 2 oz. water. Given to capacity every 3-4 hours. Appella discontinued.
2. Continue routine medication during daytime only.

Discontinue the medication after 48 hours of no diarrhea. Change from Probana to Evaporated Milk and water formula (1:2) after five days of no diarrhea.

DISCUSSION

The treatment as outlined applies to the baby having severe diarrhea with dehydration of several days duration. Mild cases of short duration may well need no more than rest for the bowel, the medication by mouth, and subcutaneous fluids. Those cases of longer duration or with more dehydration may need the plasma in addition.

The use of the continuous sub-cutaneous infusion as the method of hydration takes advantage of an automatic cut-off. As hydration is approached, the flow of fluids slows, and as hydration is reached, the flow stops. Hence, the giving of these fluids does not require close watching by the nursing staff. In spite of the use of a continuous injection of a salt-containing solution, edema has not resulted in any of the several hundred cases treated in this way. The administration of plasma (or albumin) is most important in this respect as edema will result if it is omitted.

This treatment has usually resulted in a stoppage of the diarrhea within 48 hours, with hydration being obtained in 24-36 hours. This routine rapidly corrects the physiological upsets that occur in the course of severe diarrhea with hydration.

1. Water is quickly replaced.
2. Salt deficiencies are corrected.
3. The acid-base equilibrium is re-established through the selective excretion of unneeded ions.
4. Plasma proteins, which have been serving as food for the baby and on which most of the osmotic pressure of the blood depends, are rapidly replenished.
5. Vitamin B-Complex, which has much to do with the proper functioning of the bowel, and which is lost during the period of vomiting and diarrhea, is administered early in the course of treatment.
6. The gastro-intestinal tract is placed at rest and given a chance to recuperate.
7. The gastro-intestinal tract is cleared of almost all bacteria which might further irritate an already inflamed bowel.

CONCLUSION

A simple treatment for diarrhea with dehydration is described and outlined. This treatment requires little or no laboratory work and little nursing care, but is rapidly effective.

PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE

A sixty-two-year-old man was admitted to the hospital for consideration of gastric surgery.

Four years before admission the patient was found to have pernicious anemia. He was regularly given liver injections in the clinic, which provided excellent control of the anemia, and had an annual gastrointestinal series. Twenty-one months before entry a roentgenogram showed a prominent mucosal fold on the posterior wall high on the lesser curvature. This was unchanged one year and again four months before admission. Gastroscopy ten months before admission revealed what appeared to be atrophic gastritis and a benign polyp on the anterior wall of the antrum toward the lesser curvature. Because of these persistent findings the patient was referred to the hospital.

He had had no gastrointestinal symptoms and had gained 10 pounds in weight during the past year. There was no history of constipation, abdominal pain or food intolerance.

On physical examination the patient was well developed and well nourished, and did not appear ill. The general examination was completely negative.

The temperature, pulse and respirations were normal. The blood pressure was 158 systolic, 94 diastolic.

The urine was normal. The blood hemoglobin was 14.5 gm., and the white-cell count 7800. The nonprotein nitrogen was 30 mg., and the total protein 6.3 gm. per 100 cc., and the prothrombin time 15 seconds, (normal, 13 seconds). pearing esophagus. No defects were identified A gastrointestinal series showed a normal-ap- in the stomach, duodenal cap or loop, or the small bowel. The previously questioned polypoid defects in the antral region of the stomach were not confirmed in this examination.

On the fourth hospital day an operation was performed.

Dr. C. B. WARRENBURG

Our patient today is a 62 yr. old man who was admitted to the hospital for consideration of gastric surgery. He is in good health; has no complaints; all physical examinations are entirely normal, as well as all laboratory and x-ray studies. His pernicious anemia is a 4 yr. duration and has been regularly treated and with proper medication. He has responded quite satisfactorily to that therapy. The pernicious anemia was apparently not too severe because there were no neurological symptoms described and the gastrointestinal symptoms were not too severe a degree.

Pernicious anemia by definition is a disease due to deficiency in the body of material derived from food and manifest as a macrocytic anemia associated with disturbances of the gastrointestinal tract and frequently of the neuro system. If untreated, the disease progresses by relapses and remissions to a fatal issue. Under adequate treatment and with a suitable preparation of liver or stomach, the blood picture remains normal, symptoms but not all signs of disorder of the digestive system vanish, and no progress or development of the neuro system lesions occur. That is a quote, as you all may know, from Cecil's Medicine.

In pernicious anemia, during the phase of relapse, the entire mucosa is invariably atrophic but marked improvement occurs following treatment with liver extract. The propriety of ascribing the atrophy of the gastric mucosa in this disease to gastritis is still debateable. In certain cases of iron deficiency in anemia, the gastric mucosa is also atrophic and improves markedly in appearance following suitable therapy. Schindler considers that atrophic gastritis is usually the end result of a continued superficial gastritis. There is a great deal of evidence that atrophic gastritis is the precursor or common etiologic background of pernicious anemia, gastric polyposis, and gastric carcinoma.

Certainly an atrophic gastric mucosa is present in all cases of pernicious anemia and is frequently found in neoplastic changes of the mucosa. Konjetzny has presented histologic evidence of complete transition from atrophic gastritis to benign and malignant epithelial neoplasia. This same investigator and numerous others contend that gastric carcinoma never develops in a normal mucosa and that it results from chronic atrophic gastritis with hyperplasia. The essential process is not the chronic inflammation, but the regenerative change in the epithelium resulting from the chronic gastritis. In Konjetzny's extensive experience, gastric carcinoma is always associated with such changes. In transitional stages from chronic atrophic gastritis with small areas of hyperplasia to papilloma in carcinoma have been clearly shown. Chronic atrophic gastritis seems to vary fundamental relationship to gastric polyposis, and carcinoma, and also to pernicious anemia. Ringer and his associates found the incidence of carcinoma in patients with pernicious anemia to be three times that of a controlled group. Varying views on the role of atrophic gastritis have been expressed by Warren, Meisener, Stout and others.

In the diagnosis of carcinoma of the stomach, the importance of carefully examining all patients in middle life and beyond, who have continued abdominal distress, cannot be over-emphasized. The symptoms of carcinoma, while usually suggestive, are not diagnostic. The physical and laboratory examinations may yield corraborative, although as a rule not pathognomonic evidence. The Roentologic and gastroscopic examinations give more exact and precise information. The diagnostic accuracy of the complete clinical study is very great, so great indeed, that exploratory laporatomy is a diagnostic procedure in gastric disease is rarely indicated. In fact, the evidence gained by palpation and by inspection of the stomach at operation may be less reliable than that obtained preoperatively.

It is my feeling that our patient today was operated on the fourth hospital day as an exploratory laporatomy to see if a carcinoma of the stomach was present. He has no findings suggestive of carcinoma of the stomach, and it is my feeling that exploratory laporatomy revealed no carcinoma. There was probably a moderate degree of atrophic gastritis present.

DIFFERENTIAL DIAGNOSIS

Dr. GRANT V. RODKEY: May we see the x-ray films?

Dr. STANLEY M. WYMAN: I have tried to select the pertinent films from several examinations. This film is the original observation of the prominent fold described, this being inward projection of the wall of the stomach involving the mucosa apparently. This is seen later on a different type of film as a polypoid structure. I do not think the discrepancy in location with that described gastroscopically need be taken too seriously since it is hard to be certain of geography in these examinations. The last examination shows a different appearance of the stomach; whether or not this is a valid observation I cannot say. In this sort of situation one really needs to palpate the stomach and thus to determine whether the changes seen are constant – whether or not there is any stiffening of the wall of the stomach. There seems to be, however, some narrowing of the wall of the stomach, and certainly judging from the films alone, I should be forced to wonder whether there was some process infiltrating the gastric wall; I cannot go any farther than to wonder about it.

Dr. RODKEY: Would you think it was a rather unusual appearance around the body of the stomach?

Dr. WYMAN: I think it could be due to underfilling of the stomach which is lying transversely; however, I should wonder whether the stomach was being constricted. I do not see the fold that we originally saw with any degree of certainty on these later films. I think, however, that it would be quite dangerous to say it was no longer present.

Dr. RODKEY: This case highlights one of the dilemmas in the treatment of cancer of the stomach. The frequent occurrence of gastric cancer and polyps of the stomach in association with pernicious anemia is quite generally recognized. One of the earliest investigators to note this association was Henricus Quincke, who in 1876 observed a patient with pernicious anemia who died of cancer of the stomach. Since that time several autopsy studies have been undertaken to elucidate the relation between carcinoma of the stomach and pernicious anemia. One of the best of the series was a report by Kaplan and Rigler in 1945. Of 23,231 autopsies on patients more than 45 years of

age, they found 293 patients with pernicious anemia; of these 293 cases, 36 showed cancer of the stomach, which the authors estimated to be about three times as common among patients with pernicious anemia as it was in the remaining autopsy population of the same age group. The same group of investigators studied a subgroup of their material which contained 9 cases of cancer and 7 cases of benign polyps among 146 cases of pernicious anemia.

These pathological studies have been supplemented by statistical analyses of clinical material that show essentially the same findings. A recent report from Denmark is quite interesting. Jorgensen has studied the mortality in cases of pernicious anemia diagnosed between 1930 and 1942. They were average patients who had about average treatment — neither too good nor too bad. In this series of 206 cases followed for an average period of seven and eight-tenths years cancer of the stomach was approximately three times as frequent as in a group of similar age, sex and follow-up period without pernicious anemia. In this connection, most of us know of the attempt by Wangensteen to pick out carcinoma of the stomach from certain groups of patients who were known to have the precursors of carcinoma. Table 1 demonstrates some of the results reported in 1951 among three of the groups of conditions that were studied, the achlorhydric, the hypochlorhydric and the pernicious-anemia groups. It is apparent that pernicious anemia was about six times more frequent as a precursor of carcinoma than either of the other two conditions.

Table 1 Gastric Acidity in Cancer*

Group	No. of Patients	Patients with Gastric Polyp %	Patients with Cancer
Achlorhydric	1287	2.4	0.54
Hypochlorhydric	271	1.1	0.36
Pernicious anemia	115	3.4	3.4

*Modified from Wangensteen

The problem presented by the protocol is twofold: to make the diagnosis and to discuss what should be done about it. The diagnosis of cancer of the stomach rests chiefly on four pillars, the main one of which is the x-ray examination. In a recent series of 344 cases of proved cancer of the stomach reported by Jemerin and Colp, x-ray examination showed cancer of the stomach to be present in 293, or an accuracy of about 85%. This included repeated examinations in some cases. I think most people would agree that this method is least likely to be accurate in patients in whom the disease is very early or in cases in which there is a diffuse involvement of the stomach without gross interference of the gastric outline.

The second most helpful aid is gastroscopy. In the group of 344 cases cited above, gastroscopy was performed on 243 patients, the presence of cancer being confirmed in 194 — or about 80%. Benedict has also recently stressed the importance of gastroscopy and biopsy in making this diagnosis. However, not all the areas of the stomach are equally accessible to the view of the gastroscope; the antrum is a particularly difficult area to visualize.

The third aid in diagnosis, considerably less helpful than the previous two, is the study of the gastric acidity. Although achlorhydria is a constant feature of pernicious anemia, it is not always observed in cases of gastric cancer when pernicious anemia is not present and, therefore, is not too reliable an aid in diagnosis. It is perhaps more reliable as a screening test.

The fourth and newer aid in the diagnosis of gastric cancer — probably more helpful than the previous one — is the study of the gastric cytology. Seybolt, Papanicolaou and Cooper reported a series of 974 cases in which the specimens obtained were satisfactory for examination (the problem of obtaining a satisfactory specimen is important in gastric cytologic studies because of the tendency of the gastric juice to digest the exfoliated cells.) In this series of 974 specimens the smears were positive in 50% of cases in which cancer was later demonstrated to be present in 2.5% of the smears were falsely positive. In this hospital Ulfelder et al. reviewed a series of cases of which 45 specimens were satisfactory for cytologic examination; of these, 14 patients were proved at operation to have gastric cancer. Of these 14 cases of proved cancer, the smears were positive in 12. In another recent summary of experience with cytologic smears published by Traut and his associates, malignant cells were found in 30 of 42 cases in which the smear was satisfactory for examination — an incidence of correct finding of 71%. These investigators are using papain in an attempt to dissolve the gastric mucus and facilitate the shedding of cells by tumors of the stomach. This is an interesting idea, but the experience to date with papain has not been extensive enough for one to know whether it will become a routine adjunct to this examination.

Turning from the problem of diagnosis, we face a dilemma in treatment. It would be helpful if, in pernicious anemia, one portion of the stomach showed a marked predisposition to the development of cancer, but this really is not the case. It is true that, in general, most of the atrophy of the mucosa takes place in the fundus and body of the stomach in pernicious anemia, but in a series of 102 cases of cancer associated with pernicious anemia, compiled from several sources, the distribution of the site of the development of cancer was about as follows: The lower third of the stomach 44 cases, the middle third, 33 cases, the upper third, 18 cases, and diffuse involvement, 7 cases. Of course, given a group of persons who have perhaps three times the normal chance of developing cancer of the stomach, which can arise in any portion of the stomach, the surgeon would be quite happy to be entirely rid of the stomach. Yet, even though the mortality rate of total gastrectomy has become quite reasonable, he does not find that an attractive solution since the operation may have serious sequelas. Marked weight loss is quite common, and patients have been known to die of inanition after total gastrectomy without any evidence of recurrent cancer at postmortem examination. On the other hand, after a subtotal gastrectomy even when the growth is encompassed by a suitable margin — a segment of stomach is still left behind that is prone to develop a new tumor. That leaves us in quite a dilemma.

The patient under discussion was a male in the age group with the maximum incidence of cancer of the stomach. He had pernicious anemia, which we believe gave him a threefold chance of having cancer of the stomach over the other males of the same age group. Although there was no positive evidence of cancer, the repeated x-ray examinations raised some question about the prominence of a mucosal fold, and there was a slight suspicion that the last examination showed an infiltrating growth along the body of the stomach. The gastroscopy was helpful in that a polyp was definitely visualized on the anterior wall of the antrum. That finding is significant because it is generally agreed that polyps of the stomach are precursors of cancer. Finally, there was no mention in this protocol of gastric cytologic examination, which must have been done on several occasions. On the evidence I am given, I shall say that he had an infiltration carcinoma of the stomach, which I suppose, involved the middle third — perhaps also the fundus; I suspect that the operation was a total gastrectomy. I should guess that he had metastatic carcinoma of the lymph nodes as well.

Dr. JACOB LERMAN: Did you hold back the cytologic examination?

Dr. BENJAMIN CASTLEMAN: No, I do not believe any reports of cytologic smears are in the record.

Dr. EDWARD B. BENEDICT: There was one that was doubtful.

A PHYSICIAN: At what age should one consider a total gastrectomy in patients with pernicious anemia?

Dr. RODKEY: That is a hard question. I do not think anybody can answer it. No patient likes to lose a stomach, and no responsible surgeon likes to deprive a patient of his stomach without some cogent indication. I do not think most surgeons would do a prophylactic total gastrectomy; not many would do a prophylactic subtotal gastrectomy. Certainly, these patients ought to be followed carefully by x-ray examinations — as has been done in many clinics — and by cytologic smear. The problem in cancer of the stomach, not only with pernicious anemia but in all cases, is the difficulty of an early diagnosis. All our diagnostic methods, except possibly cytologic smear, are helpful chiefly in cases in which the cancer is advanced. This man, because he had no symptoms whatever of cancer of the stomach — unless he did not have it, of course — typifies the patients we hope to find. By the time symptoms from cancer of the stomach are noticeable, the patient is already far gone. It is only in the early phases, when the only symptoms may be slight indigestion (usually treated by sodium bicarbonate or other alkali), that cancer of the stomach is curable. We are all concerned to devise some examination or test that will make an early diagnosis possible.

Dr. BENEDICT: Some years ago Dr. Arthur W. Allen and I looked up a series of adenomatous polyps and noted that about 40% of them were likely to be malignant. Our figure is somewhat higher than those other authors have given — it varied frmo 15 to 20%.

Dr. F. DENNETTE ADAMS: What did Dr. Benedict mean when he spoke of intestinal metaplasia in the stomach?

Dr. CASTLEMAN: Very commonly, in per-

nicious anemia or in other forms of gastritis, the ordinary mucosa of the secreting epthelium of the stomach changes to one of intestinal type with goblet cells. Some pathologists believe that the intestinal metaplasia in pernicious anemia, which is quite common, is one of the factors that leads to carcinoma.

CLINICAL DIAGNOSIS

Pernicious anemia.
Atrophic gastritis, with gastric polyps.
? Carcinoma of stomach.

Dr. GRANT V. RODKEY'S DIAGNOSIS

Carcinoma of the stomach.

ANATOMICAL DIAGNOSIS

Pernicious anemia.
Atrophic gastritis, severe, with intestinal metaplasia.
Adenomatous polyp of stomach.

PATHOLOGICAL DISCUSSION

Dr. CASTLEMAN: The first operation on this patient was a sub-total resection; we found two polyps corresponding to what was seen through the gastroscope, which were benign adenomatous polyps. At first we believed this pateint had adenocarcinoma in situ, but upon further study I decided it was not really cancer but marked regeneration in a severely atrophic mucosa of the type that might well go on to carcinoma. We told the surgeons, who were planning to do a total gastrectomy because of the preliminary report of adenocarcinoma in situ in the two foci of ulcerations, that it was very active regeneration and not cancer. After a great deal of consultation they believed that since the patient was in good condition it would still probably be better to do a total gastrectomy, which was done just two days ago. In about a dozen blocks through the resected stomach, we found areas similar to those which I showed and other areas in which there was early polyposis within the epithelium with large numbers of cystic dilated glands. It reminded me of the cystic endometrial dilatation that we see in hyperplasia of the endometrium which may also be precancerous. Since the parietal cells that produce the hydrochloric acid were all absent, I wonder how much normal junction of this stomach remained. Perhaps such a patient has already been partially adjusted to some of the effects of a total gastrectomy.

Dr. BERNARD M. JACOBSON: That is a new and interesting concept of a malfunctioning stomach — it certainly is not clinically true. One did not gather that the patient under discussion had any digestive difficulties or malnutrition or anything of that sort.

I should like to make just one comment. I agree with Dr. Rodkey's excellent discussion of carcinoma of the stomach associated with pernicious anemia. He cited two Scandinavian groups who recently showed that the incidence of carcinoma of the stomach was three times as great in patients with pernicious anemia as among those without pernicious anemia of the same age and sex. Both groups also analyzed their cases by sex and found even more striking figures; in one group the male patients with pernicious anemia demonstrated seven times as great a frequency as patients without pernicious anemia; in the other group there was four times as great a frequency. The female patients, disclosed two and two and a half times as great a frequency, respectively. These data are incomplete in that they are statistics of causes of death of patients with pernicious anemia as stated in death certificates. Even the best figures, such as those of Kaplan and Rigler, were compiled from routine post-mortem examinations of patients with pernicious anemia who died in the hospital. That does not give a true incidence of carcinoma of the stomach associated with pernicious anemia. Theoretically, the true incidence should be determined by follow-up studies of large groups of patients with pernicious anemia for many years who have no symptoms of cancer of the stomach, and in who it can be found on routine examination.

I bear some of the responsibility for the multiple specimens that Dr. Castleman received. I was asked to see this patient before the first operation when the diagnosis was considered to be benign polyp and advised a total gastrectomy. That was radical advice but it was based on certain observations, on two patients with adenocarcinoma, who later died. Dr. Leland S. McKittrick explored the first patient and did a beautiful, clean resection with an adequate margin; there were no involved lymph nodes. If any patient was considered a good operative risk and good chance for complete cure that was it. The patient was dead from cancer within a year. The second patient, who was completely asymptomatic but had evidence of cancer of the stomach on x-ray examination, had a subtotal resection; no lymph nodes were involved. Six or seven months later we did an-

other gastric smear, which was positive. The patient went back into the hospital for further resection. There was more cancer in the stomach, either a new cancer or extension of the previous cancer, from which he subsequently died. In the case under discussion, after the initial examination when the benign polyp was found, I was asked again to see the patient and thought that he should have a total gastrectomy. That was before Dr. Castleman told me about the metaplasia.

Dr. BENEDICT: Was the first operation a subtotal gastrectomy or a minimal excision?

A PHYSICIAN: A subtotal gastrectomy.

Dr. BENEDICT: Followed by a total?

Dr. JACOBSON: Yes. It must be remembered that a total gastrectomy is not going to have to be considered often. I think it is going to be very difficult to detect carcinoma of the stomach in a patient with pernicious anemia when it is curable at all — once a year, perhaps, in a hospital of this size.

Dr. CASTLEMAN: This patient had apparently been adequately treated for four years, and yet his stomach showed a very severe atrophic change — a finding that was recently emphasized in Australia by Motteram, who made a series of gastric biopsies in 43 patients with pernicious anemia and demonstrated that there was no change in the mucosa after treatment.

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THE President's PAGE

SESSION ON LEGAL MEDICINE

THE Committee on Medicolegal Problems will again sponsor and direct a Session on Legal Medicine to be held during the AMA meeting in Atlantic City in June. If you attended the Session that was presented in San Francisco, you will no doubt recall that it was extremely interesting and was received with enthusiasm by a large number of physicians and lawyers.

The Session will be held on Wednesday, June 8 at 2 o'clock in Room A, Convention Hall. The following papers will be presented:

1. **The Mentally Ill Patient, Competence to (a) consent to treatment, (b) contract, (c) testify and (d) make a valid will.**

   Francis J. Gerty, M.D., Chairman, Subcommittee on Forensic Psychiatry, Committee on Medicolegal Problems, Chicago

2. **Trauma and Cancer**

   W. C. Hueper, M.D., Chief, Environmental Cancer Section, National Cancer Institute, Bethesda, Maryland.

3. **The Federal Income Tax Law in Relation to Medical Practice**

   C. M. Lauritzen, II, LL.B., Member of the Chicago Bar

4. **The Model Post-Mortem Examinations Act**

   C. Joseph Stetler, LL.M., Director, Law Department, American Medical Association.

5. **Human Experimentation, Medicolegal Aspects**

   Irving Ladimer, M.D., Chief of Special Studies, Welfare and Health Council, City of New York.

6. **Chinese Immigration and Blood Tests**

   Sidney B. Schatkin, LL.B., Assistant Corporation Counsel, City of New York.

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible

ARE YOU AFRAID TO HAVE CONSULTATION?

C. C. Craig, M.D.

President, Maricopa County Medical Society

A large majority of our mal-practice claims could be prevented if all of us would have consultation much more often than we do. None of us know everything and help is definitely needed. The doctors who have been in practice a number of years can feel, or sense, when the patient or family begins to be disatisfied. This is the moment to ask one of your colleagues to see the patient with you before the patient, or the family, demands it. For the younger man it is not an admission of weakness or lack of knowledge that he asks for consultation. Our hospitals encourage and want you to have consultation.

The attending physician knows whether or not the patient is able to afford a consultation fee. He should tell the family, or the patient, that he would like to have consultation and that there will be an extra fee for this. If the patient or the family request consultation, the attending physician should ascertain from them whether they want to change doctors or to have a consultation. It is at this time that it is easy and graceful to resign from the case with no hard feelings on either side.

It is not an admission of your short-comings or lack of ability to ask for consultation. Use it frequently, and you will find that your patients appreciate it and do not look down upon you because you have asked for consultation.

CONSULTATIONS (See Chapter V of AMA Code of Ethics)

1. In case of consultation, be sure the patient and/or family knows this is or is not an added expense.
2. Get consultation when there is any doubt in your mind as to diagnosis, treatment or your ability to hand the case.
3. When the patient or the family requests consultation, consent readily.
4. Ascertain whether the patient or the family want consultation or a change of doctors.
5. Ask for consultation before a patient and/or family become dissatisfied with your services.
6. Consultation with cultists is unethical. (Read very carefully Chapter II, Section 1, AMA Principles of Medical Ethics.)
7. Tell the consultant what you want, preferably in writing, i.e., intravenous pyelogram, complete kidney work-up, and/or complete work-up of case with other consultants, if necessary.
8. Tell consultant whether or not you want a written report of the consultation and the case returned to you for care, or if it is your wish for him to take over the case.
9. Determine first whether the case is to be

one of consultation or referral. Make this clear to the patient and to the consultant. (Read Chapter VI, Section 1 through 9 very carefully.)

ATTENTION PHYSICIAN PILOTS

SOME TIME ago several physicians simultaneously conceived the idea of forming a national society of flying physicians. Initial action was started by Mr. Mark E. DeGroff of Tulsa, Okla., medical equipment manufacturer, who offered to act as a central office until preliminary arrangements could be made. A notice in the A.O.P.A. Newsletter brought forth over 100 interested inquiries. About 28 physician pilots attended the American College of Surgeons Meeting in Atlantic City and 24 attended the AMA session in Miami. It was felt that enough interest was shown to warrant an attempt to organize.

It was decided that the purposes of this society should be scientific, educational and social. Physicians have a considerable influence which should be passed on to everyone to promote greater aviation safety. Further, physicians who have this interest could learn much about the technical aspects of flying from association with each other.

The immediate objectives are: compilation of a complete list of physician pilots; appointment of temporary local area chairmen; the collection of ideas and suggestions; and encourage physicians to fly in to the AMA Meeting at Atlantic City, June 6-10, 1955.

A scientific and social program can be arranged at Atlantic City if enough interest is shown.

Will physician pilots who are interested please send their names, plane flown and landing field to the local chairman of their area, or, if not known, to H. D. Vickers, M.D., 25 Jackson Street, Little Falls, New York, temporary chairman.

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

Cornelius ((Dusty) Rhoads, M.D., of the N. Y. cancer Memorial Hospital says that DEFEATISM IN CANCER IS OBSOLETE; that it can be attacked as just another "microorganism"; and that KOCH'S POSTULATES HAVE BEEN FULFILLED, believe it or not! . . . One should believe him, doubtless, and his reasoning is sound — the cells can be recovered from the lesions (like bacteria); they can be cultured outside the body (in fluids and in animals); and they will induce the characteristic disease when reinoculated. . . . It isn't easy to do these things, and the results are not invariable, but our methods are still weak. Besides, Koch couldn't do it with every tubercle.

AGAMMAGLOBULINEMIA has recently sprung at us from every journal. It apparently explains the lack of resistance to recurrent infections in some adults. It probably also is the cause of death in numerous unexplained infant tragedies. . . . Antibodies which the foetus has received from the mother last until the infant is about 2 to 3 months of age. The serum gamma globulin drops at that critical time, and the infant must synthesize its own. The rise is slow, and does not return to normal until age 5 years. . . . The nadir may find some infants seriously susceptible to infections which would make the more fortunate ones only slightly ill. Respiratory attacks can then be fatal.

GAMMA GLOBULIN has been given to a few infants who had failed to control infections with the help of antibiotics. It seemed to work, as a replacement therapy say Harris and Schick of New York.

The term 'agammaglobulinemia' was cointed by Bruton as recently as 1952 (which is actually 3 years ago by the calendar, but 2 years ago to those of us who still write '1954' on our datelines) . . . The New England Journal of Medicine reported a total of 28 cases this February (1955). . . . The laboratories doubtless will be doing Tiselius electrophoretic studies for gamma globulin by the hundreds in a sometimes logical attempt to link chronic or recurrent infections, both in children and adults, to a lack of g.g. . . . Two recent cases of bronchiectasis were found to have no germinal centers in their lymph nodes at autopsy, and a general absence of plasma cells.

The question of a relationship between the GAMMA GLOBULIN level and a type of illness which has been said to be due to MALINGERING may arise again. . . . ARIZONA MEDICINE reported a case of multiple and recurring abscesses of the skin in a nurse some years ago. Dr. Frank Meleney of New York said that it was, in his wide experience with similar cases, probably self-inflicted. . . . We'll have to ask if he has changed his mind.

Remember the days of 'Popular Mechanics', and how we eventually were surprised at the reality of such early dreams? . . . Here is another imaginative and medical article, but from 'The American Weekly'. It tells of a "TELEDOCTOR", composed of a television transmitter and receiver, and equipped with mechanical hands. The M.D. can watch the patient from his office, and treat him, as indicated. . . . The mechanical hands, like those used to handle 'hot' atomic substances, could give cartridge injections by remote control. . . . This seems pretty far away, but only because it isn't available, would cost a lot, and because we can't even get channel 7 from a huge TV station.

A 'SEMINAR ON HYPNOSIS' is announced for April in Los Angeles. Two items are of interest — It is under the auspices of the Los Angeles Chapter of the American Hypnodontic Society, a group which we'd wager is not well known even to dentists. Secondly, one of the four instructors (a psychiatrist, a psychologist, a dentist, and an OB-Gyn man) is MILTON Erickson, M.D., of Phoenix. As has been said before now, Dr. Erickson has a greater name nationally than in his home state.

CHLORPROMAZINE progress — A few cases of hiccups have been dramatically and abruptly cured by 'Thorazine'. . . . Agranulocytosis has popped up, as it often does from a new drug, weeks after a week's use of the drug. . . . Contact dermatitis has been described in two nurses who handled a liquid preparation. . . . Onto each drug a little rain must fall.

A new drug, synnematin B, reported in the JAMA by Benavides V. et al., is said to be superior to chloromycetin in treatment of typhoid fever, and is worth re-emphasizing. . . . The effect was regular in 15 cases; the relapses few and treatable; and severe complications from the disease were non-existent. It apparently is bactericidal and is an antibiotic. The first disadvantage seems to be impurity, with febrile reactions being common after parenteral injection. . . . The work was done in Mexico City, with two

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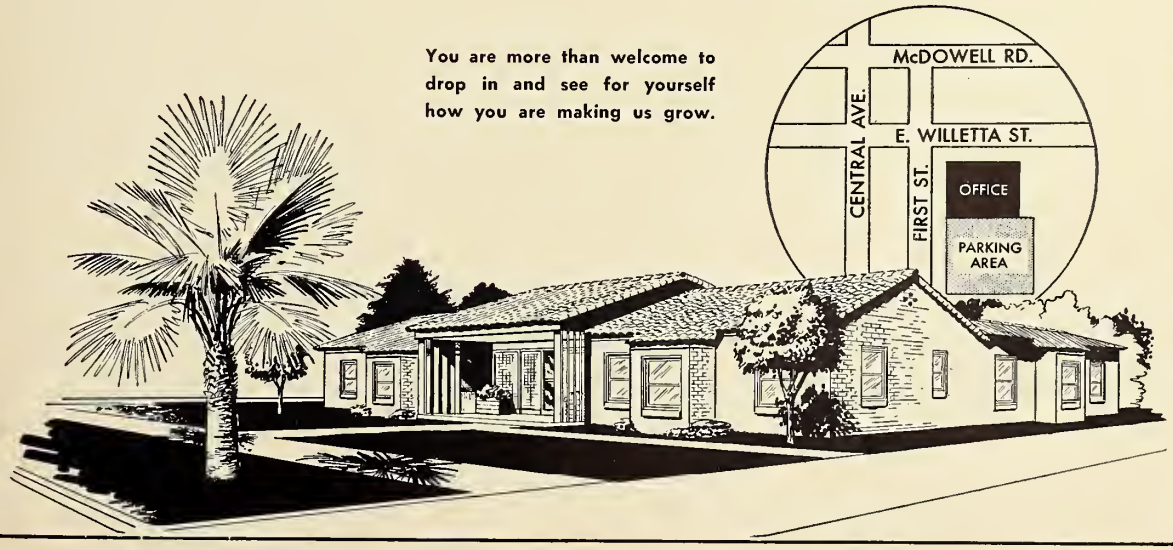
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If you will, PLEASE, remember to tell your patients to come to our HOME OFFICE, FIRST STREET at WILLETTA in Phoenix — and in Tucson, 507 Valley National Building.

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of the authors from Lansing, Michigan. Typhoid could happen in the latter place, but more often in Mexico (and even possibly in Arizona). . . . As an aside, did you know that the current name for B. Typhosus is 'Salmonella typhi'? Those bacteriologists!

Dr. Jules Freund reported to the American Academy of Allergy that injections of EXTRACTS FROM CERTAIN ORGANS can produce damage to the same organs of that animal. . . . Antogenous sciatic nerve suspension caused peripheral neuritis. Brain suspensions produced meningo-encephalitis. Suspension of tests caused testicular damage and sterility. . . . These actions were most regular and effective when the suspension was in an adjuvant such as paraffin oil.

One of the most amusing medical stories in this year's newspapers is that of the woman in Florida who is about to have her eighth baby. Obstetricians and anaesthetists may not be laughing much, unless they have a true sense of humor. . . . It seems that SHE HERSELF has delivered FIVE of her previous babies, and also has put herself in the proper frame of mind "to enjoy the rapture of natural childbirth" by downing a SERIES OF HIGHBALLS after labor begins. . . . This is a fine idea, provided there are no complications, is not too much pain, and the person doesn't get too 'relaxed'.

Dahl and Love have studied the INCIDENCE OF HYPERTENSION in 547 adults whose SALT INTAKE was known. They found that a small group ate no salt, and had no hypertensives. The more salt ingestion the higher the incidence of hypertension. . . . This confirms the expectations, but still needs to be re-confirmed.

The NEATEST MEDICAL 'TIE-IN' we have seen (and a very valuable one, too), is the distribution of a journal-size reprint from 'POSTGRADUATE MEDICINE' by the Abbott Labs, with a hand-written note on his calling card by one of the Abbott medical directors. . . . Good publicity for 'P.G. Med'., which is having a subscription campaign. Good hook-up for Abbott's, which supplies vitamins, etc. Good (nay, wonderful) case presentations, with 150 color photos and graphs, by the special editor Tom D. Spies. . . . Dr. Spies is one of the first to arrange for research on his pet topics in distant areas where the lesions are more lush, a triple-play from Ohio to Birmingham to Puerto Rico. (Maybe Castle of Harvard was the first to work on tropical sprue, in the Carribean. Maybe we should go back to the U.S. Army, and the malaria and yellow-fever work). . . . Anyway, you never saw such photographs in your life, especially of the mouth and tongue.

Isoniazid was said to be ineffective on any organisms other than the tubercle bacillus. . . . It has been used, and apparently found useful, however, in such unconnected conditions as MULTIPLE SCLEROSIS and ULCERATIVE COLITIS. . . . Here is a chance for us to dream up an etio-or nosologic theory, since the connection (if any) hasn't been announced.

CONJUNCTIVAL infections, allergies, inflammations, etc., have been hugely benefitted by CORTISONE. The drug works as an ointment or in aqueous solution, especially with the help of ANTIBIOTICS. . . . Now we have another drug, SELENIUM SULFIDE (heretofore reserved for seborrheic scalp lesions), which is said to have cleared 92% of a series of "blepharitis marginalis". . . . (In cases with both conditions, just let the shampoo run down into the eyes).

The March meeting of the CAL. TB & HEALTH (AND TRUDEAU) SOCIETIES produced a few nuggets of chest disease wisdom. Several of the articles have been bespoke for ARIZONA MEDICINE, but a few of the other comments are worth noting in this paragraph. . . . A shamefully large per cent of patients with lung lesions found in a chest x-ray survey, arranged especially for private patients of a group of physicians, were NEVER FOLLOWED UP. Suggestion — An official agency is needed to help and/or prod the busy M.D. . . . TV is allowable, as a valuable diversion, for patients at bedrest. . . . The NEW DRUGS, including ethyl vanillate and a fencholate, offer little or no help for FUNGUS DISEASES. . . . RESECTION of destructive lesions is valuable in cases with almost any fungus. . . . The essential BREATHING TESTS may be limited to a total vital capacity, timed (3 sec.) vital capacity, and the maximum breathing capacity. . . . Any collapse measure which is aimed to prevent OVERDISTENTION of the residual lung after resection must be done at one. . . . Small (but good) SANATORIA are and will be necessary. They must be kept running. New beds for TB should be built as part of GENERAL HOSPITALS. . . . INH and PAS are the best 'DUAL DRUG' regimen, at present. The SEED-BED of future TB is the man over 40 with unrecognized TB, and the woman over 60. . . . The SMOG problem is one of terrible complexity. So far it has had no effects on the death-rate, morbidity, absenteeism in school or industry. As a discomfort it STILL needs to be controlled.

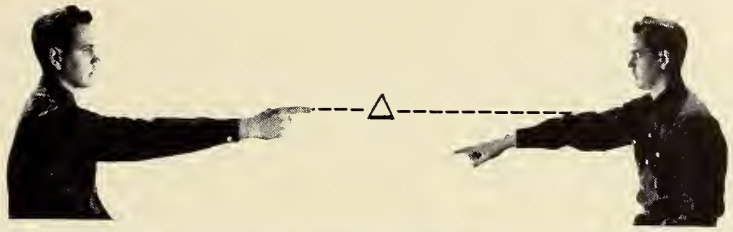
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3. The Rotation (swivel chair) Test. *The patient sits in a swivel chair with his eyes closed and his head on a level plane. The chair is turned through ten complete revolutions in twenty seconds. Stimulation of a normal labyrinth will cause nystagmus, past pointing of the arms and subjective vertigo.*



Notes on the Diagnosis and Management of "Dizziness"

I. Vertigo

The term "dizziness" (vertigo) should be restricted to the sensation of whirling or a sense of motion.[1] This sensation is usually of organic origin and is the tangible symptom of a specific pathology.

Moderate vertigo, with a sense of motion and a whirling sensation, may be produced by infection, trauma or allergy of the external or middle ear. Examination of the ear will usually disclose the abnormality.

Severe vertigo, which will not permit the patient to stand and causes nausea and vomiting, indicates an irritation or destruction of the labyrinth. The specific condition may be labyrinthine hydrops, an acute toxic infection, hemorrhage or venospasm of the labyrinth or a fracture of the labyrinth. Multiple sclerosis and pathology of the brain stem should be considered also.

It is important to learn if the patient's sensation is continuous or paroxysmal.[2] Paroxysmal vertigo suggests specific conditions: Ménière's syndrome, cardiac disease and epilepsy. Continuous vertigo without a pattern may be due to severe anemia, posterior fossa tumor or eye muscle imbalance.

Dramamine® has been found invaluable in many of these conditions. In mild or moderate vertigo it often allows the patient to remain ambulatory. A most satisfactory treatment regimen for severe "dizziness" is bedrest, mild sedation and the regular administration of Dramamine.

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Dramamine (brand of dimenhydrinate) is supplied in tablets (50 mg.) and liquid (12.5 mg. in each 4 cc.). G. D. Searle & Co., Research in the Service of Medicine.

1. Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.

2. DeWeese, D. D.: Symposium: Medical Management of Dizziness: The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. *58*:694 (Sept.-Oct.) 1954.

SEARLE

Notes from the EDITORS PEN

SYMPOSIUM ON TUBERCULOSIS

July 11 to 15, 1955 at Saranac Lake, New York, the fourth annual symposium for General Practitioners, sponsored by the American Trudeau Society, Saranac Lake Medical Society and Adirondack Counties Chapter of the New York State Academy of General Practice will be held. The presentation: "Tuberculosis and Other Chronic Pulmonary Disease" is approved for 26 hours of formal credit for members of the AAGP. Informal panel discussions with ample opportunity for questions will be arranged. Sessions will be held in the various sanatoria, hospitals and laboratories in the Saranac Lake area. The faculty will consist of physicians, surgeons and scientists from Saranac Lake as well as guest lecturers. Registration fee, $40.00. Write Doctor Richard P. Bellaire, General Chairman, Symposium for General Practitioners, P.O. Box 2, Saranac Lake, New York.

NURSE RECRUITMENT PROGRAM

Our own Woman's Auxiliary in cooperation with the Arizona State Nurse's Association is rendering an outstanding community service in furthering the nurse recruitment program. Student nurse recruitment symposiums are being held throughout the state under its sponsorship and "future nurse" clubs have been organized in many of our high schools. Over 40 girls are serving as hospital aids, a most worthy contribution to the health and welfare of our people. In the fall of last year 7 girls were given loans for student nurse training by our Auxiliary, including girls from Nogales, Tucson, Clifton, Morenci, Phoenix, Laveen and Prescott. To date 22 girls have taken advantage of the Loan Fund, and $5,750 is in circulation. Congratulations, Ladies!!!!

FIFTY-YEAR SURVEY SHOWS ADVANCES IN MEDICAL EDUCATION

Doctor Edward L. Turner, secretary of the Council on Medical Education and Hospitals of the AMA recently reported that by 1960 between 7,300 and 7,500 physicians would be graduated. In the past 54 years while the nation's population doubled, approved medical school graduations increased 114.6 per cent. Enrollment in medical schools increased from 12,530 to 28,227; graduates increased from 3,165 to 6,861.

Two common misconceptions about medical schools were contradicted from study of facts of the past 50 years:

1. While there were more medical schools and more graduates in 1900 than at present, it should be remembered that many of the turn-of-the-century medical schools were "little more than diploma mills". Only about a third of them could offer education that met acceptable standards for medical practice. In 1910, an analysis of schools "revolutionized" medical education. Control of the number of physicians graduated by medical schools has not been endeavored by interested organizations; rather, medical schools have been advised against undertaking to admit more students than their facilities or faculties could possibly justify, if they are to be properly educated.
2. The confusion which "gave rise to wild distortions . . . that only one applicant out of ten or more could possibly get into a medical school" is contradicted by fact pointing out that actually, in 1953-54, one out of 1.97 applicants was admitted to an approved medical school. Only 14,678 premedical students applied for admission, but they filed 48,556 applications. Students applied to an average of 3.3 schools.

Five more schools are now being developed. The University of California at Los Angeles will be the first to graduate a class, in June, 1955. The others are the University of Miami, Albert Einstein College of Medicine in New York City, Seton Hall College of Medicine in Jersey City, New Jersey, and the University of Florida in Gainesvlile. The medical schools of the Universities of Mississippi, Missouri, and West Virginia are expanding from two-year to four-year schools. All eight of these will be graduating physicians by 1960.

ROCKY MOUNTAIN CANCER CONFERENCE

Denver is the scene, July 13 and 14 the dates, at which time and place the Rocky Mountain Cancer Conference will be held. Outstanding orators of national recognition will participate. Doctor Jerrold Nesselrod and Doctor Elmer Hess, the latter President-Elect of the AMA will be among the invited guests. Make arrangements for attendance now. More details will follow.

IS "SOCIALISM" A FRAUD

There are 400,000 workers in the British National Union of Railwaymen. When they voted for public ownership of the railroads they fully expected to see their wages rise beyond those of railroad workers in America. But after nearly ten years of public ownership of the railroads, they have come to a point where they must make themselves satisfied with wages ranging from $18 to $26 a week and called off their scheduled strike. The details show that Socialism is a fraud when it says that public ownership creates a "workers paradise".

After two years of negotiation, the Government has agreed to raise the wages of the low-level employees from $17.50 to $18.34 a week, a week increase of 84 cents, or 16 cents a day. The highest paid railroad men, the engineers, receive $25.50 weekly, and their raise will be a few cents a day more than that given the lower rate employees. The Union has accepted this settlement.

American railway workers receive wages which are, on the average, about three to four times higher than those of their counterparts in England. And thousands of the skilled engineers on our modern trans get 600 to 800 per cent more than the English engineers who are living and working in their "workers paradise" of public (or Government) ownership.

The records speaks for itself and is living proof that the "free enterprise system is the better way of life.

54th ANNUAL MEETING OF THE AMERICAN PROCTOLOGIC SOCIETY

The 54 Annual Meeting of the American Proctologic Society will be held at the Hotel Statler, New York City from June 1-4, 1955. All meetings are open to the medical profession.

From Thursday, June 2nd to Saturday, June 4th technical papers by members and guest speakers will be presented.

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Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

THE STORY OF RESERPINE. Moore, Pierce and Dennison, Journ. Indiana State Med. Assn., August, 1954. A very interesting historical review of Rauwolfia Serpentina, and its pharmacologic effects and clinical uses.

CARCINOMA OF LUNG WITH CALCIFICATION. London and Winter, Arch. Int. Med., July, 1954. It is generally accepted that calcification in an isolated nodule in the lung rules out malignacy so far as treatment indications go. That this is not a pathognomonic sign is proven by a case report by these authors in which an isolated pulmonary nodule containing calcium was found (biopsy and autopsy) to be a slow-growing well-differentiated adenocarcinoma. Cases reported by other writers are cited.

PEDIATRIC SPECIAL. The Journ. of the Mich. State Med. Soc., for September, 1954, contains eight articles on pediatric subjects. Among them is one by Stuart P. Barden on "Roentgen Diagnostic Aids in Acute Pediatric Emergencies." He discussed foreign bodies in the lower respiratory passages, spontaneous tension pneumothorax in the newborn, inhalation of very volatile substances such as gasoline and kerosene, large thymus shadows, congenital lesions of the alimentary tract, acquired mechanical obstruction of the alimentary tract, adynamic ileus, acute toxic nephrosis and the traumatic abdomen.

FLUID AND ELECTROLYTE BALANCE. Minnesota Medicine, August, 1954. . . . "a working knowledge of new terms and techniques of water and electrolyte balance have become essential in the care of many medical and surgical diseases." The "milli-equivalent doctor" and the "get-em-well" doctor have become one and the same." A series of two fairly complete and beautifully illustrated articles by a group of observers which includes Edward B. Flink, Bernard Zimmerman, Howard G. Worthen and Richard B. Raile, present the Basic Considerations in Fluid and Electrolyte Balance and in Part II, Parenteral Fluid Therapy in Infants and Children.

NON-TUBERCULOUS CAVITIES IN THE LUNGS. James J. Waring, Denver, Minnesota Medicine, August, 1954. He presents instances of cavity formation in patients with Friedlander's bacillus pneumonia, coccidioidomycosis, actinomycosis, histoplasmosis, paragonimiasis, Hodgkin's disease, cancer and tuberculosis masquerading as simple abscess of the lung. Tomograms often reveal unsuspected cavities. Cavities behind the heart or in the vertebral gutter are often missed, when lateral and oblique films of the chest are not made.

ROUTINE CHEST FILMS IN A SMALL HOSPITAL. J. W. Boyd, in Ohio State Med. Journ., Sept., 1954, reports experience of a 60-bed rural hospital in the use of the routine admission chest examination, using the large 14x17 film. In a twelve month period 1205 such examinations were made, excluding all patients with known or suspected chest complaints. Of the 1205 with no known or suspected chest disease, 133 or 11 per cent showed some significant abnormality or finding. Fifty had lung disease not previously suspected; 61 had abnormalities of heart or great vessels, and six neoplasms were found.

PAINFUL SHOULDER. Kaplan and Tyler, Journ. Louisiana State Med. Soc., Sept., 1954. Discusses the causes and treatment. Advocates x-ray therapy in the acute stage, three or four treatments usually being required.

PULMONARY NEOPLASMS. Ane and Neal, Journ. Louisiana State Med. Soc., September, 1954. Discusses the differential diagnosis of benign and malignant pulmonary neoplasms. The roentgen methods available include — the routine postero-anterior view, fluoroscopic examination, lateral and oblique views, apical or lordotic views, Bucky films, bronchography, body sectioning films, and arteriography or angiopneumography. "Radiological examination of the chest is the simplest and most effective method of detecting early malignant lung lesions."

BACKING INTO SOCIALIZED MEDICINE. Conn. State Med. Journ., Sept., 1954. A short but very trenchant article by Hon. Howard Buffett, former U. S. Representative from Nebraska, shows how we are backing into socialized medicine via the military route. Already twenty million World War II veterans and their dependents enjoy free medical service from the government. These are being increased by 900,000 a year and if UMT comes in, as is very likely, one-half of our citizenry will be getting free medical treatment from the government. The armed forces have absorbed the doctors until now the army has one doctor for every 275 men and women in uniform; the navy has one doctor for every 195 men and the air force one for every 315 men. The civilian population has one doctor for every 710 possible patients.

NEUROBLASTOMA AND WILMS' TUMOR IN INFANTS AND CHILDREN. This article by Kruse, Snyder and Chaffin, in the Western Journ. of S., O. and G., October, 1954, is based on study of 111 cases.

PHYSIOLOGY OF THE THYMUS GLAND. Goeffrey Keynes, in British Medical Journal, Sept. 18, 1954. The Thomas Young Memorial Lecture at St. George's Hospital, London, Apr. 2, 1954.



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ARIZONA Pharmaceutical PAGE

UNTAPPED RESEARCH

By Joseph A. Zapotocky, Ph.D.

College of Pharmacy, University of Arizona

BEFORE any new drug reaches the shelves of the pharmacies throughout the country it is vigorously examined by various teams of research workers. The coordinated efforts of chemists, who may synthesize or isolate a new drug from natural sources; the pharmacologists, who screen a new drug for its specific actions; and the clinicians, who continue the evaluation of a new drug on humans, are all needed before a manufacturer can consider mass production and distribution. As the development of a new drug proceeds from team to team, more research workers become involved in its study and evaluation. The results of their observations are, in a great majority of cases, reported in various scientific journals. However, when the drug is at last made available to physicians and pharmacists, the number of potential research workers in this group who report their observations is small compared to the markedly increased number of observers.

Each group is capable of making important contributions to the knowledge of medicine. Physicians and pharmacists make numerous daily observations and each group has the opportunity to record data on many phases of its work. There are countless opportunities for research here, and each group can add infinitely to our knowledge of medicines and disease. Daily, the pharmacist encounters problems arising from the use of new combinations of drugs and the changes resulting therefrom. It may be necessary for him to study and solve problems involving stability, preservation, and storage of drugs. He can also judge a patient's acceptance of the appearance, taste, and the method of administration. The physician, on the other hand, can note the efficacy of the drug under a variety of conditions, compare different dosage schedules and the effectiveness of different dosage forms, he can verify or contradict therapeutic claims, and he can make studies on the prognosis of a disease. Extensive studies along these lines may result in significant conclusions, and would warrant publication in one of the national scientific journals which are available to both professions. There are also a number of local pharmaceutical and medical journals where an exchange of ideas could be developed. In these local journals, the beginner has a valuable opportunity to express his ideas, report his finding, and draw the necessary conclusions from his study. The preparation of such a report can act as a stimulus for further study, for becoming a keen observer, and for keeping up to date with regard to scientific developments and techniques. Too few make use of these facilities.

The beginning research worker may become easily discouraged. A joint project by two workers is often more successful because each stimulates the other and helps prevent termination of good intentions by the lone research worker. There are problems which lend themselves to study by both physician and pharmacist. Each would profit by this joint effort not only by the exchange of ideas and knowledge but by the mutual esteem each will develop as a result of such association.

RESUME OF THE THIRD ANNUAL CANCER SEMINAR

THE following is a resume of the Third Annual Cancer Seminar held in Phoenix under the auspices of the Arizona Cancer Society and Arizona Medical Association. The suggestion was made to Dr. Cameron that these thoughts be embodied in a review so that they would be available to the many physicians of Arizona who could not attend the meeting. There is no effort in originality. It is merely the interpretation of this writer of the participant's comments during this excellent session.

I. Dr. George Pack discussed the differentiation of ulcer-carcinoma vs. ulcer of the stomach. It has been his experience that the ratio between gastric ulcer and gastric carcinoma follows a ratio of about 1 to 1. There is very little difference in considering the age of occurence, gastric ulcer occurring in a patient of an average age of 52 years, gastric carcinoma at 55 years of age. However, if consideration is given for the specific decade of life there is considerable variation. In the 30 to 40 year old group the frequence of ulcer as compared to cancer is 4 to 1 while in considering the 70 to 80 year old group the frequency of ulcer to cancer is 1 to 2.

The location of the ulcer may be of significance. Forty per cent of pre-pyloric lesions at Memorial Hospital in New York are malignant. Some series report the incidence to be as high as 70 to 75% malignant for the pre-pyloric lesions. Near the cardiac end of the stomach on the lesser curvature 50% of the lesions are malignant. Possibly the safest place for the ulcer to occur in the stomach is at the the incisura angularis. The most dangerous site is the greater curvature. There are only three instances at Memorial Hospital where an ulcer of the greater curvature proved to be benign.

Size of the ulcer is obviously no absolute criteria in differentiating ulcer from ulcero-carcinoma.

The true "ulcer syndrome" will occur in about 17% of patients with gastric carcinoma and it will occur in about 35% of the group of patients with ulcero-carcinoma. The duration of symptoms may be significant in that obviously the more benign will have the longer history. Seventy per cent of the cancer cases had a history of one year or less while only 20% of the carcinoma cases had a history that went beyond two years.

The patient with a healed gastric ulcer shows a much greater tendency to develop gastric carcinoma than does the normal patient.

Laboratory Studies: Gastric analysis is not conclusive in differentiating these two problems. 22% of patients over 65 years of age will have no free gastric acid. 10% of the patients with benign ulcer have an anacidity while 52% of the patients with gastric carcinoma have an anacidity. However, the significant thing is that 48% of the patients with cancer had acid and even had hyperacidity.

X-ray studies have been able to obtain a 96% correct diagnosis of gastric carcinoma at Memorial Hospital. On x-ray examination the ulcer that extends through and beyond the wall of the stomach is more likely to be a benign ulcer. A significant observation is that the benign ulcer will tend to heal from all directions while observed under x-ray; that is, up from the base and in from the sides. In contrast, the ulcero-carcinoma has more tendency to be intraluminal and if it does heal it will heal from the base only and not from the sides. If the rugi do not come up to the ulcer margin the impression of an ulcero-carcinoma is much more correct than that of a benign ulcer.

Gastroscopic examination, having been preceded by x-rays, is only done in the doubtful cases.

If the therapeutic trial is carried out there must be healing, a weight gain by the patient and loss of symptoms. Four weeks is long enough for the therapeutic trial and there must be absolutely no recurrence of the ulcer.

It is to be noted that even at surgery where 12 to 17% of the gastric ulcers were diagnosed as grossly benign, malignancy was found on microscopic study.

It is Dr. Pack's impression that surgery is unduly delayed in most cases of gastric lesions for the over-all picture shows a 50 to 60% good results under a satisfactory medical regime, while good results can be attained at a level of 90 to 95% under surgical treatment.

II. Dr. Eugene P. Pendergrass discussed the Radiologist's Diagnostic Criteria in Lesions of the Upper Gastro-intestinal Tract. It was his belief that all questionable lesions of the stomach must be operated upon and they

must be looked at by the surgeon. The surgeon cannot and must not depend upon the feel of the stomach wall to make his diagnosis. Further, if the patient has symptoms negative examination by the Radiologist cannot be considered as conclusive. At the University of Pennsylvania they are getting relatively good results with the Papanicolaou technique of cytological studies where the Ayre brush is used.

III. Dr. Averill Liebow discussed the Diagnosis and Management of Premalignant Lesions of the Colon and Rectum. This discussion considered primarily the problem of polyps and ulcerative colitis. This group presents considerable difficulty for all regenerative hyperplasia can fade very readily into neoplasia. Dr. Liebow believes that there are fundamentally two types of polyps: 1. The adenomatous polyp which arises from the glands beneath the superficial epthelial layer and which is probably seven times as frequent as the second type or the papillary adenoma. 2. The papillary adenoma is more sessile and develops from the surface glands but more frequently it is this type that becomes malignant. Dr. Hellwig has found that at the age of 60 one in five people will have polyps of the colon and in 42% of the patients these polyps will tend to be multiple. If there are multiple polyps it is usually on a familial basis. It is significant that the percentage distribution of polyps and carcinoma of the colon occurs in the various segments on a basis that is almost identical. In the cases of colon resected at the Mayo Clinic, 18% showed a co-existance of cancer and polyps. Of 1500 colons examined at autopsy, 7% of the polyps showed an invasive carcinoma. Of the unsuspected carcinoma, 80% occurred in patients who had more than one polyp.

It is significant and extremely important that a biopsy of any particular area of a polyp if negative for carcinoma is not diagnostic. The carcinoma can start in any area of the polyp.

Chronic ulcerative colitis in the non-specific form usually leads to large linear ulcers and seems to have some relation to polypoid changes. It is frequently the scarred, healed ulcers that are the site of malignancy. In an extensive review of patients with colitis 10 to 16% of the patients showed polypoid degeneration. There is an over-all incidence of 2 to 4% of carcinoma of the colon in patients who have chronic ulcerative colitis. It is significant that the cancer that develops in this group of patients is extremely difficult to detect for it is noted only as a puckered scar. The malignancy in this group of patients de- at an early age and there is early metastasis. It is certain that if any polypoid change develops in a patient with ulcerative colitis there is a very definite danger of cancer.

Possibly a study that we are not carrying out adequately is the followup studies on the resected large bowel case. Dr. Pendergrass advocates follow-up x-ray studies at 6 weeks, 3 months, 6 months and at increasingly prolonged intervals. It is his impression that 8% of the people over 40 years of age have polyps of the large bowel. One third of them will have more than one polyp and 15% of the polyps will develop into a malignancy.

IV. Dr. George T. Pack discussed the Rectal Sphincter Preservation Controversy. It was his belief and certainly the accepted fact that surgery must be adapted to the disease and not to the patient. The question must be asked, "Has the operation been adequate?" The best indication at present for the use or the preservation of the rectal sphincter seems to be the inoperable carcinoma. The lesion occurring low down, that is, in the terminal six centimeters of the rectum is particularly malignant and cannot be handled by any conservative procedure. This effort at attaining a cosmetic result with a vicious disease not only leads to inadequate surgery but it is not uncommon to have a patient who is incontinent or develops a severe stricture. If there is a sphincter saving procedure carried out Svenson's technique, that he has developed for Hirschsprungs disease, seems to be the desirable technique to perform. If this procedure is done the mallignancy must have been at least 10 centimeters above the anus and no more than 3 centimeters of the terminal rectum saved.

V. Dr. Alexander Brunschwig discussed Problems in the Rehabilitation of the-Ostomy Patient. In the patient with a colostomy it becomes extremely important to establish a routine. Have the patient irrigate the colostomy every 24, 48 or 72 hours and wear a bag for a short time thereafter. Five to seven quarts of fluid should be used for irrigation.

If a uretero-intestinal anastomoses is done

and there is an intact sphincter below the site of anastomosis many of the patients will develop a hyperchloremic acidosis. They will feel weak, lose their appetite, have numerous vague symptoms and complain of a very bad taste in the mouth. They have a very rapid deterioration and occasionally will come to death. With urine in the colon and a continent sphincter the patient will likely develop a high blood chloride, an elevated blood urea nitrogen and decreasing CO_2 combining power. This patient should take at least 4,000 cc. of fluids each day. At night put a colon tube into the lower bowel and give 0.5 grams of soda bicarb qid. In all of these patients urinary antiseptics as Urotropin, Furadantin and Gantricin must be used with frequency and over prolonged periods.

VI. An Evaluation of Present Day Treatment for Cancer of the Breast by Dr. George T. Pack and Dr. J. A. del Regato.

Approximately 25,000 deaths occur each year in the female from malignancy of the breast. This incidence seems to be increasing also. In 1900 the incidence was 5.5 deaths per 100,000 while in 1950 it was 13 deaths per 100,000 from cancer of the breast.

Clinical Pathological Calssification by Dr. George T. Pack:

1. Fibrocarcinoma. This is a scirrhous response, a defense mechanism, by the patient. There is a desmoplastic diathasis. The host reaction slows down the rate of the growth. However, once the malignancy breaks through the defensive mechanism it is just as malignant as any other form of breast cancer.
2. Inflammatory carcinoma of the breast. This is an acute disease. It occurs in the younger female and you have almost the exact opposite host reaction to that noted in the scirrhous response or the fibrocarcinoma. Sometimes it is impossible to palpate a tumor. The skin of the breast will become red and seems to be almost an anphylactoid type of reaction on the part of the patient. There is certainly no resistence by the host. Memorial Hospital in New York has no record of curing a patient with this inflammatory carcinoma. The longest life they have been able to attain in any patient of this group is 3½ years. It is certain that these patients should not receive surgery but should be treated by radiation as a palliative procedure.
3. Medullary Carcinoma (Bulky Adeno-Carcinoma). This group of carcinomas are bulky, soft, and anaplastic. The degree of malignancy is high. It is inclined to ocur in the older patient. They will frequently develop ulceration and fungate. The tumor is radio-sensitive. It is Dr. Pack's impression that very likely preoperative irradiation will prove helpful. This type of carcinoma accounts for approximately 5% of the breast cancers. 80% of them will survive five years if no axillary metastasis was present at the time of surgery, four years if there are axillary metastasis. This group will not fit in any way to the inoperable classifications outlined by Drs. Haegeson and Stout.
4. Paget's Disease. This is fundamentally an intradermal carcinoma. A nodule may or may not be felt. However, if a nodule is felt or not, a radical mastectomy should be performed as there is actually diffuse interductal malignancy. This group of cancers show considerable radiosensitivity and unjustifiably in the past some Dermatologists have attempted to treat this lesion by irradiation.
5. Gelatinous Carcinoma of the Breast. This malignancy tends to occur in the older group of women. It is a colloid carcinoma with mucin production. They are usually well encapsulated. They appear as a cyst with purple to red jelly and a few cells in a sea of mucous. On palpation crepitus may actually be felt. They are slow growing and the prognosis is relatively good.
6. Papillary Carcinoma (intraductal or intracystic). In the breast having a benign intraductal papilloma 10% will develop cancer. In papillary cyst adenocarcinoma surgery is always indicated. If Dr. Pack obtains blood an asperation, either old or new blood, he believes surgery is indicated. Papillary carcinoma of the breast occurs fundamentally in an older age group and tends to metastasize at a relatively late time.
7. Ductal Carcinoma of the Breast. This is a diffuse malignancy of the breast. There is no single discrete tumor. The breast is simply heavier than is usual. The entire ductal tree is involved. There is edema and pig skin like changes of the skin with early lymphatic invasion. The cure rate is very low. In this type of malignancy there must be an enormous sacrifice of the skin. These lesions

are radiosensitive and radiation may be used pre-operatively to alter technically inoperable lesions to become operable. Five year cures can be anticipated in only 19% of the cases.

8. Sweat Gland Carcinoma. The breast is a modified sweat gland and a carcinoma of this category can develop here. It most commonly develops beneath the areola, in the folds of the breast or near the tail of the breast. It is inclined to invade the skin early.
9. Acinar Carcinoma of the Breast. This type of carcinoma usually occurs in the younger female. It is usually this category of carcinoma if the malignancy develops in a fibroadenoma.
10. Small cell hyperchromatic carcinoma of the breast. This is a small, soft lesion that is very anaplastic. It is in this group of malignancy that there is diffuse boney metastasis. These respond rather markedly to hormonal control.

The incidence of carcinoma of the breast in the daughters of a patient who had carcinoma of the breast is approximately three times that which is anticipated in the general population. This means that the incidence of carcinoma jumps from 2% or the average in the general population, to 7% in the women whose mothers had a cancer of the breast.

Dr. Urban at Memorial Hospital is doing many more super-radical mastectomies than had been done in the past. This is not new. Halstead had tried it. Bloodgood even did a number of low neck dissections in conjunction with his radical breasts. Cushing while a resident did a number of the super-radical mastectomies. To date we are not able to properly evaluate these procedures but it does seem that extension of this type of surgery is indicated. This seems particularly true since the internal mammary lymph nodes are a primary way station particularly from the central section of the breast. That is, from beneath the nipple and the medial half of either breast. Of the figures available today there seems to be a 36% metastasis to the internal mamary glands where the patient has a central or medially placed carcinoma of the breast. Consequently, Dr. Pack recommends a substernal resection for the patient with sub-areolar or a centrally placed carcinoma of the breast.

There seems to be an increasing frequency of carcinoma developing in the opposite breast in a patient who survives for an adequate period following a radical mastectomy for malignancy. In 1930 they found a 3% incidence of carcinoma in the opposite breast. In 1950 this incidence had stepped up to 9%. Dr. Pack brings up the question, "Should one do a simple mastectomy on the opposite side in all cases where a radical mastectomy is performed?" It is his belief that this time will come.

Dr. del Regato has not found that preoperative radio-therapy for a carcinoma of the breast that falls in the operable group is indicated. The evidence to date does not prove that this "will prove fruitful".

As to radio-therapy postoperatively it is his belief that it is not possible to give adequate radiation over the wide radical breast area without excessive damage. There is no question that radio-therapy does not seal the lymhpatics. In the past it was the impression of many people that there was increase of 5 year cures of 5 to 7% by the use of radiation therapy. As time goes on this increase in cure rate by the administration of postoperative irradiation seems to be more doubtful. In fact, to date it has been found that this procedure which should reduce the number of cases that have local or regional recurrence actually have a greater number of regional recurrence. Dr. del Regato feels that post-operative irradiation if administered in a different fashion may prove helpful. By this he inferred that 5000 to 6000 R to a limited area where implants are suspected over a six weeks period is the desirable procedure but not to attempt to irradiate a wide area. Possibly this same procedure of administering large doses over the 2nd to 4th intercostal spaces might be helpful.

If bone metastasis are present radio-therapy seems to prove superior to hormonal therapy. In the same group of cases castration may prove desirable. Dr. del Regato believes that x-ray is equally as efficient as surgery in bringing about castration. Dr. Pack strongly disagrees with this point of view. (He would undoubtedly be joined by Dr. Meigs who opposed irradiation castration in the Seminar last year.)

Dr. McWorter's work of Edinburgh was reviewed by Dr. Ackerman for Dr. del Regato. It was found that no simple mastectomy was performed. There was only removal of the tumor. It was an oversized biopsy and large fields of irradiation were used. Again Dr.

del Regato feels that adequate dosage cannot be given over this wide area without doing excessive damage even to the point of necessitating a shoulder girdle amputation.

In the studies to date it has been found that one half of the patients with axillary metastasis already have internal mammary involvement and 1/10th of the patients without axillary metastasis have internal mammary lmph node involvement or metastasis.

Neither Dr. Pack nor Dr. del Regato would advocate sterilization as a prophylactic procedure to prevent spread or recurrence of a malignancy after a radical mastectomy in the pre-menopausal female.

VI. Dr. Charles S. Cameron discussed the Smoking Problem. In the period 1920 to 1950 the incidence of carcinoma of the lung has increased 450%. It has increased to the point where it now exceeds tuberculosis as a cause of death. The ratio of the female to the male varies considerably and all of the statistics to date are bound up ni analysis of male smokers. However, the ratio seems to vary between 1 and 7 and 1 to 9 for female to male for carcinoma of the lung.

The American Cancer Society is in the process of making a rather extensive study in following the case histories of 186,000 men 50 years of age and older and then following these patients until the time of death. Then a full report as to the cause of death is obtained. Comparison of smokers to non-smokers on a per 100,000 basis carried out. The incidence of death per 100,000 increased 426 to 745 of the smoker vs. the non-smoker. In considering coronary artery disease as the cause of death there is an increase from 171 to 334 per 100,000 in favor of the non-smoker over the smoker. Finally, and surprisingly, they are finding that carcinoma of all types is increased in the smoker as compared to the non-smoker. in this series the rate per 100,000 was stepped up from 63 to 161. The death rate was con-

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sidered as whether the man had been an urban or rural dweller. This seemed to be no particular difference, the prime difference depending upon whether he had been a smoker or not.

Darwin W. Neubauer, M.D.

TUBERCULOSIS CONTROL

AS THE result of the able leadership of Doctor Millard Jeffrey, Chairman of the Legislation Committee of this Association, and the untiring efforts especially of Senator Harold Giss who actually drafted the amended version of Senate Bill 20 introduced by Senators Hart and Haldiman, and the cooperation of the House of Representatives spearheaded by Representative E. B. Thode and Governor Ernest W. McFarland, the following Senate Bill 20 was enacted into law by the 22nd Legislature of the State of Arizona, First Regular Session, signed by the Governor on April 8, 1955, becoming Chapter 126 of the laws of the state, effective immediately under the emergency clause:

AN ACT

RELATING TO PUBLIC HEALTH; PROVIDING CARE AND TREATMENT FOR PERSONS HAVING COMMUNICABLE OR CONTAGIOUS TUBERCULOSIS; PROVIDING FOR STATE REIMBURSEMENT TO COUNTIES PROVIDING CARE AND TREATMENT, AND MAKING APPROPRIATIONS.

Be it enacted by the Legislature of the State of Arizona:

Section 1. **Short title.** This Act may be cited as The Tuberculosis Control Act of 1955.

Sec. 2. **Definitions.** In this Act, unless the context otherwise requires:

1. "State department" means the state department of health of Arizona;

2. "State board" means the state board of health of Arizona.

3. "Commissioner" means the commissioner of the state department of health of Arizona;

4. "Tuberculosis control officer" means the director of the activities of tuberculosis control;

5. "Health officer" means the local health officer;

6."Tuberculous persons" means any person having communicable or contagious tuberculosis who is a state resident as defined in section 3;

7. "Institution" means any public or private hospital, rest home, sanatorium, nursing home or other facility approved by the state department of health for the care and treatment of persons having tuberculosis in a communicable or contagious stage.

Sec. 3. **Residence.** (a) Any person who has resided in the state of Arizona continuously for at least one year shall be deemed to be a state resident.

(b) The continuous residence required to acquire state residence shall not include any period during which the person was:

1. A patient or inmate in any hospital or public or private institution while receiving treatment for tuberculosis;

2. A member of the armed services of the U. S

(c) If the periods of residence immediately prior and subsequent to, the periods specified in subsection (b) shall together equal the required period of residence, such person shall be deemed to be a state resident.

Sec. 4. **Declaration of policy.** (a) It is the policy of the state of Arizona to treat persons having tuberculosis in a communicable and contagious stage as dangerous to the health and welfare of the citizens of the state. It is also the policy of this state to declare that all cases of tuberculosis in a communicable or contagious stage should be isolated in an approved hospital, institution or nursing home, or at home if such home isolation meets the approval of the health officer and the tuberculosis control officer. To this end, it is hereby declared that quarantine provisions to achieve isolation of such communicable or contagious tuberculous persons should be accomplished to the fullests extent regardless of such person's ability to pay. It is further declared that such persons with communicable or contagious tuberculosis shall be given full opportunity to enter isolation voluntarily. In order to prevent effectively the spread of this disease it is necessary that the state:

1. Further the discovery, the care, supervision and treatment of persons having tuberculosis in a communicable or contagious stage;

2. Encourage the use of all available public and private facilities to that end;

3. Regard this tuberculosis program as one of public health and one to be dealt with according to public health requirements rather than those of indigency.

(b) Tuberculosis is hereby declared to be a communicable and contagious disease within the contemplation of the quarantine laws of this state only where such tuberculosis is in a communicable or contagious stage.

(c) No person is to be quarantined for tuberculosis under the laws of this state if his physician or surgeon shall certify to the health officer that such person is observing adequate sanitary and precautionary measures to prevent communication of tuberculosis to others.

Sec. 5. **The tuberculosis control officer.** (a) The tuberculosis control officer shall be appointed by the state board. He shall be a licensed medical physician and surgeon experienced in the field of tuberculosis and tuberculosis control, and, subject to the supervision of the commissioner, shall administer and direct the activities of tuberculosis control. He shall be responsible for the detection, supervision, quarantine, investigation of contacts, and all other matters pertaining to the control of tuberculosis as herein provide. He shall, in his discretion and with the cooperation of local medical societies and the local health departments, conduct or supervise clinics for the diagnosis, treatment and control of tuberculosis in convenient places throughout the state. The tubercu-

losis control officer shall maintain a register of tuberculous health status of known persons having tuberculosis, and of their contacts, based on current reports obtained from physicians, institutions, clinics and health departments.

(b) The tuberculosis control officer may:

1. With the consent of the attending physician, examine any or all records, reports, and other data pertaining to the tuberculous condition of tuberculosis patients, provided that information so obtained shall be confidential and privileged and shall not be divulged so as to disclose the identity of the person to whom it relates;

2. Inspect the facilities, operations, and administration of institutions providing care or treatment for which the county applies for state aid; and

3. With the consent of the attending physician and the patient or his guardian, examine or cause to be examined, any tuberculous patient in such institution or at home and to make or cause to be made such laboratory tests or x-ray examinations as in his judgment may be necessary.

(c) The tuberculosis control officer through the commissioner shall cooperate with any existing or hereafter created agency of the government of the United States to qualify for and procure the aid of the United States in caring for tuberculous persons receiving care or treatment under this Act, provided, however, that nothing herein contained shall be construed to authorize the tuberculosis control officer to accept for care or treatment or for any purpose whatsoever at the expense of the state or any political subdivision thereof, any person who is entitled to care or treatment by the United States or any agency thereof.

Sec. 6. **Costs of removal of persons to another state or country.** When any person who has communicable or contagious tuberculosis and who has not acquired state residence, has lived or resided in any other state or country or has relatives or friends willing to undertake the obligation to support him or to aid in supporting him, in any other state or country, the tuberculosis control officer, subject to the regulations of the state board, may furnish him with transportation to such state, or country, provided, in his judgment the interest of the state of Arizona and the welfare of such person will be promoted thereby. The expense of such transportation shall be paid by the state welfare department out of funds appropriated to it for the purpose of carrying out the provisions of this Act, and the commissioner of welfare shall thereupon seek reimbursement for such expense from the appropriate agency of the other state or country.

Sec. 7. **Determination of ability to pay.** (a) Any person unable to pay the full cost of care or treatment for communicable or contagious tuberculosis, shall be referred to the state welfare department which shall:

1. Determine the extent to which such person can pay the cost of such care or treatment, after the person has provided adequate support for those having a legal claim for such support;

2. Determine and furnish such further welfare department assistance as may be reasonable to provide adequate support for those who have a legal claim for support upon such person;

3. Determine what assistance is needed to provide any special diet, specific drugs, laboratory services, x-rays or other requirements to facilitate the full recovery of such person.

Sec. 8. **Responsibility for care or treatment by counties.** The local board of health, through the board of supervisors of the county, shall be responsible for securing care or treatment of tuberculous persons in an institution or at home. Whenever a tuberculous person, as defined in this Act, shall receive care or treatment pursuant to this Act, the cost of such care or treatment shall be reimbursed by the state department as hereinafter provided. The county in which such tuberculous person resides shall be responsible for providing the necessary care or treatment.

Sec. 9. **State aid reimbursement to counties for the care and treatment of tuberculous persons.** Whenever, on or after the effective date of this Act, a county shall:

1. Provide home care or treatment for tuberculous persons in a manner approved by the tuberculosis control officer;

2. Expend moneys for the operation of an institution as defined in this Act; or

3. Contract and spend money for the care and treatment of tuberculous persons in an institution as defined in this Act, which contract has been approved by the tuberculosis control officer, then in each instance such county shall be entitled to state aid reimbursement as provided in section 10.

Sec. 10. **Amount of state aid reimbursement.** (a) Upon compliance with the provisions of this Act, each county shall receive the following amount of reimbursement from the state:

1. If the tuberculous person is cared for in a county institution, the county shall receive an amount equal to the annual per diem patient cost to the county for care and treatment for each tuberculous person but in any event, not more than seven dollars per patient day for each such tuberculous person.

2. If the tuberculous person is cared for in an institution approved by the state department, and with which the county has contracted to pay for the care of tuberculous persons, then the county shall receive an amount equal to the amount of the contract, but in any event not more than seven dollars per patient day for each such tuberculous person.

3. If the tuberculous person is cared for at home and the tuberculosis control officer has approved such person for home care, then the county shall receive an amount equal to the cost of x-ray, laboratory services and specific drugs provided to each such person.

(b) Each approved institution participating in this program shall submit annually to the state department of health, a statement of reimbursable cost on forms prescribed by the tuberculosis control officer. Per diem costs for patient care shall be determined from these statements.

Sec. 11. **Procedure; application for state aid reimbursement.** The board of supervisors of each county desiring to make application for state aid under this article shall on such dates as may be fixed by the tuberculosis control officer, submit to him the request of such county for state aid and shall support such request with such information as the tuberculosis control officer may require. The tuberculosis control officer shall prescribe the form in which such information shall be submitted. The board of supervisors of a county approved for state aid reimbursement under this Act shall submit each quarter to the commissioner, on forms approved by the state auditor, a claim for payment, which claims shall be approved and paid.

Sec. 12. **Rules and regulations.** The state board of health shall have the power, by affirmative vote of the majority of its full membership, to make such rules and amend the same as may from time to time be deemed necessary for the proper administration and enforcement of this Act. The state board shall, by regulation:

1. Prescribe reasonable and necessary measures for the submission of reports and statistics from counties participating in state aid reimbursement under this Act.

2. Prescribe reasonable and necessary measures regarding standards of medical care to be used by institutions caring for tuberculous persons.

3. Prescribe necessary and reasonable measures not in conflict with law for the enforcement of the provisions of this Act.

4. Define, for the purposes of this Act, communicable or contagious tuberculosis and the communicable or contagious stage thereof.

Sec. 13. **Limitation of authority for treatment.** Nothing in this Act shall authorize the board, or any of its officers or representatives, or any county, to impose on any person against his will or contrary to his religious concepts any mode of treatment, provided that sanitary or preventive measures and quarantine laws and regulations are complied with by any such person.

Sec 14. **Control and expenditure of funds.** The tuberculosis control officer shall control and keep an account of all moneys encumbered or spent under the provisions of this Act. He shall not approve any contract between the county and an institution, or payment to a county for home care of tuberculous persons, or payment for a tuberculous person cared for in a county institution, in excess of the amount appropriated. If it appears that the appropriation is insufficient to reimburse the counties as provided in this Act, the tuberculosis control officer shall apportion the appropriation to those counties providing aid to tuberculous persons as provided in this Act on the basis of the number of tuberculous persons cared for by each such country as compared to the total number of tuberculous persons cared for by all counties under the provisions of this Act.

Sec. 15 **Exemption.** In preparing the annual budget, any appropriations made thereunder by county boards of supervisors for the purpose of carrying out the provisions of this Act shall not be included in the ten per cent budget limitation provided for counties under the provisions of section 73-503, Arizona Code of 1939.

Sec. 16. **Appropriation.** (a) There is hereby appropriated to the state department of health three hundred twenty-five thousand dollars, and to the state welfare department seventy-five thousand dollars from the general fund to carry out the provisions of this Act, such appropriations to become available July 1, 1955, and to be exempt from the provisions of sections 10-925 and 10-930, Arizona Code of 1939, relating to quarterly allotments and lapsing of appropriations, respectively.

(b) The sum of twenty-nine thousand three hundred sixteen dollars appropriated under subdivision 30 of the general appropriations bill, first regular session, twenty-second legislature, for the following purpose: 7 tuberculosis nurses, shall be deemed to be a part of, and not in addition to, the appropriation made under the terms of this Act to the state department of health, and shall be expended for the purposes and in the manner set forth herein.

Sec. 17. **Severability.** If any provision of this Act, or the application thereof to any person or circumstance, is held invalid, the remainder of this Act, the application of such provision to other persons or circumstances, shall not be affected thereby.

Sec. 18. **Emergency.** To preserve the public peace, health and safety, it is necessary that this Act become immediately operative. It is therefore declared to be an emergency measure, to take effect as provided by law.

Approved by the Governor — April 8, 1955.

Filed in the Office of the Secretary of State — April 8, 1955.

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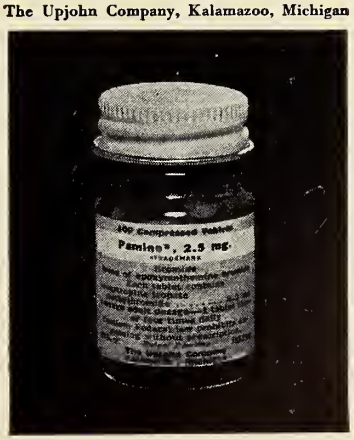
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Organization PAGE

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

EQUITY!

TODAY the responsibility of the individual physician to his patient is greater than at any time in our history. This responsibility will increase because his organization (medicine) has interested itself in many phases of patients' welfare at County, State, and National levels. The general public, yours and my patients, expect that we, as part of organized medicine, will advise them in matters pertaining to their economic and social welfare, their relation to society and government, as well as attend them in illness or injury. Those physicians who consider their patients' welfare from the standpoint of the privacy of the home, office, or hospital room alone, stand to be proven behind our times.

In this day of third party medicine, whether it be the State Industrial Commission or an economic development of our own profession, we are teaching the patient that we respect and recognize an intermediary. We are showing our organized interest in the social welfare and economics of his family.

Disregard our own affiliated economic agency, consider only this state agency. The Industrial Commission is in a similar governmental position to a superior court insofar as the relation of that individual's industrial injury to society. Our patients may then expect that, in that we subscribe to this agency, they may rightly expect us to show as much interest and willing participation — in representing them in their medico-economic problems in the courts.

Since the physician is to interest himself in the legal actions of his patients, it behooves each of us to become proficient in this phase of medicine.

A learned, widely experienced, local attorney has been asked to treat on the several phases of this subject and instruct us of **our privileges** of the safeguards to our ethical behavior that are a part of the American judiciary system. The **courts** of our state, the judiciary branch of our government bids to be yours and my ever increasing **civie responsibility.**

The first topic is the right of privileged testimony, a right which is that of the lawyer as well as the physician. This may be ready next month.

* * *

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 111 East Willetta, Phoenix, Arizona.

X-RAYING THE SICK PAYS OFF

Sixty-seven per cent of the active tuberculosis cases new to Minneapolis in 1953 were found among the sick. A report from F. G. Gunlaughson, M.D., Director, Bureau of Health Maintenance in Minneapolis, reveals that the mobile unit survey accounted for only 16.4 per cent of the new cases.

The new active cases were detected in four principal ways: discovery while the patient was hospitalized for another illness — 80; discovery while consulting a physician or clinic regarding another illness — 42; through a mobile unit survey — 29; and contacts — 12. The remaining 19 cases were from miscellaneous sources.

Although the number of cases found among the sick and hospitalized was greater than found in mobile surveys, the highest percentage of cases per 1,000 examined was among contacts and men housed in Salvation Army quarters. In fact, in order to find less than one case per 1,000 on the mobile unit, 57,000 had to be x-rayed, whereas for the contacts and Salvation Army programs only slightly more than 500 had to be x-rayed in each group to reveal rates of 15.0 and 22.0 respectively.

A tabulation of occupations of persons x-rayed shows that those working at service occupations, such as cooks, waiters, and maids accounted for 29 cases or a case rate of 103.7 per 100,000 as compared to a case rate of 39.7 per 100,000 for all groups. This information points up that x-raying foodhandlers was another very productive case-finding measure in Minneapolis in 1953.

The Arizona Tuberculosis and Health Association presented this excerpt from NTA News Letter, March 1955, Issue II.

* * *

UNITED CEREBRAL PALSY ASSOCIATION

OF CENTRAL ARIZONA INC., 718 Security Building, Phoenix, Arizona.

This is to acknowledge receipt of the Minutes of Medical Advisory Committee Meeting of United Cerebral Palsy under date of February 21, 1955, and received March 25, 1955. Please be advised of the fact that this page is prepared about 30 days prior to the publishing date of Arizona Medicine.

"At this meeting a proposed program for cerebral palsy patients was presented so that a team approach could be carried out. It was decided:

1) That a general physical examination by a pediatrician or internist be the first step in the evaluation of a cerebral palsy patient.

2) A neurological Evaluation should be carried out by a neurosurgeon or neurologist.

3) Locomotor evaluation, when indicated, by a physiatrist or orthopedist.

4) Psychological evaluation by a psychologist when indicated.

It was further decided that when all or that part of the above work-up which was indicated had been completed, this entire work-up be presented to the chairman of the medical advisory board for:

1) Summarization and recommendations.

2) Consideration of referral to other specialists as indicated.

3) Referral back to original examiner where indicated.

4) Aid in coordinating the rehabilitation program outlined.

5) Presentation of entire findings and recommendations to the board for their concurrence and further recommendations to the parents or guardians of the individual."

The remainder of this communication deals

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with the possibility of forming an evaluation group to be sent about the state which is to have further study. A fee schedule was adopted.

* * *

THE ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC., 207 Arizona Title Building, Phoenix, Arizona.

The Arizona Society for Crippled Children and Adults, Inc., was organized in 1928 for the purpose of marshalling forces, public and private, toward the end that all handicapped children and adults in Arizona should have the opportunity of availing themselves of modern techniques of rehabilitation. This goal was to be accomplished through public education and active participation in behalf of legislative measures designed to benefit the handicapped.

Since that time the Society has expanded its purpose to include direct service to the handicapped while at the same time vigorously working in the fields of public education and legislation. This expansion has been made possible through the annual Easter Seal fund raising campaign and numerous special benefits.

Obtaining its charter from the National Society for Crippled Children and Adults, the Arizona Society is composed of 14 county chapters, each of which maintains its own program according to general policy set by the state Society. Because the resources of most counties of the state are too limited, all 14 county chapters have united their efforts to create a statewide crippled children's diagnostic clinic service which is now carried on in cooperation with the State Department of Public Welfare, Crippled Children's Division.

Of all people who can benefit most from the program of the Society, other than the patients themselves, Arizona's medical doctors are uppermost, for it is primarily through referrals from the family doctor that the Society renders its services to the individual.

With the belief that greater understanding of the scope of the Society can bring about a greater use of its services among medical practitioners, the complete statewide program of the "Easter Seal Society" is given here:

* * *

STATEWIDE DIAGNOSTIC CLINICS — These clinics, held annually in the county seats of all counties, except Pima and Maricopa, bring to the outlying portions of the state diagnostic services of pediatric, orthopedic and psychiatric specialists. All medical doctors are invited to make referrals to these clinics, regardless of the type of handicapping condition.

FOLLOW-UP SERVICES — Accompanying the diagnostic team of specialists are physical and speech rehabilitation therapists who, on the recommendations of medical and psychological findings of both specialists and family doctor, give approved treatment and instruction to patients and family. Detailed reports of both specialist diagnosis and rehabilitation therapy are submitted to local doctors.

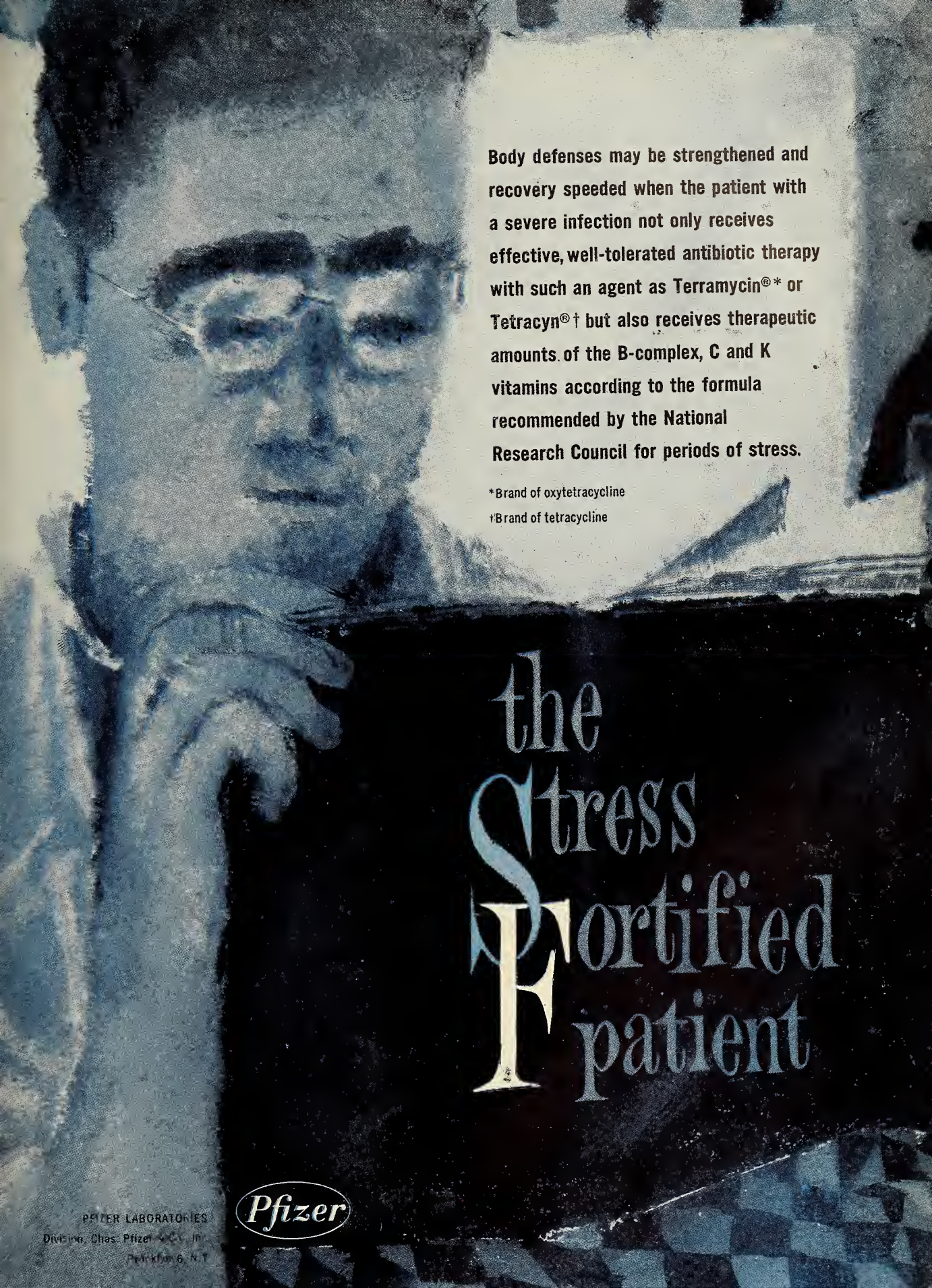
DIRECT AID — Under this heading come such services as the supplying of orthopedic devices — crutches, braces, special shoes, etc. Also provided is transportation to treatment centers, and, in some cases, costs of medicines and medical care. In all cases families are encouraged to shoulder financial responsibility within their budget limitations. "Handouts", as such, are strictly discouraged. Since the family doctor is usually the most thoroughly informed concerning the patient and the family, his requests and suggestions are sought in the best interests of all concerned.

The above program is the general outline of Easter Seal Services throughout Arizona. Naturally, all services requiring financial outlay are limited in each county by the amount of money made available through the Easter Seal fund campaign. However, the Society is usually able to enlist support of other organizations in cases requiring substantial financial aid.

In Maricopa County the Samuel Gompers Easter Seal Clinic at 7211 North Seventh Street is the focal point of the Society's services for the Valley area. Here orthopedically handicapped children of pre-school and school age are provided a daily program of education and rehabilitation therapy.

Still another service provided by Easter Seals at the Samuel Gompers Clinic is a pre-school for deaf children. Referrals are made in the same manner as in the orthopedic clinic.

Throughout Arizona the Easter Seal Society has constantly sought and received the cooperation of the medical profession. A sound pro-



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gram of rehabilitation in our state for both children and adults depends upon the continued working relationship of the Easter Seal Society and Arizona's physicians.

AMERICAN CANCER SOCIETY, INC., Arizona Division, 1429 North 1st Street, Phoenix, Arizona.

The Board of Trustees of the Arizona Division of the American Cancer Society has again approved the presentation of their Annual Cancer Seminar. There have been some suggestions with regard to a change of timing.

Since the Seminar is presented primarily for the Arizona Medical Profession, would a larger state wide attendance result by holding the Seminar in early November or late in April, rather than in early January, as has been the custom for the past three years.

The Seminar Committee headed by Edward H. Bregman, M.D., Chairman, would appreciate an expression of the opinion of the members of the Arizona Medical Society regarding this.

* * *

ARIZONA HEART ASSOCIATION, P.O. Box 2688, Phoenix, Arizona.

The Maricopa County Chapter of this association informs us that they again are starting a "Save Your Heart Class". This class begins May 4, 1955, and as before it will be conducted by the Homemakers Consultation Service.

The course is taught by a home economist and designed to help not only cardiac homemakers but all women who want to do household tasks with a minimum of effort.

Topics discussed include arrangement of kitchen work areas at correct heights, easier way to make beds, iron, and do other chores thus saving steps, energy, and time.

Tuition is free; also textbooks. The course runs for eight consecutive weeks.

Registration may be made by calling the Heart office, ALpine 3-9451 or at first attendance.

* * *

MUSCULAR DYSTROPHY ASSOCIATION OF AMERICA, INC., Pima County Chapter, 743 North Stone Avenue, Tucson, Arizona.

This chapter advises us by letter under date of March 21, 1955, that the Tucson Chapter of the Muscular Dystrophy Association was organized on March 17, 1955, at a meeting at the Children's Clinic. They state that their first official meeting will be conducted on April 13, 1955, and ask that notice be given in the May issue of our magazine.

"It is understandable that each new organization feels that the disease or malady of which it is representative should have the desired cooperation by the Medical Associations, in general, and that it should be the recipient of such good and helpful publicity as it may obtain. Therefore, we of this newly organized group request the indulgence and consideration of the Committee on Publishing of the Arizona Medicine Journal."

Space is given this local organization as we have given space to the local Heart organization because of the fact that they have not as yet developed a program at a state level.

* * *

THE AMERICAN NATIONAL RED CROSS, Maricopa County Chapter, 329 North 3rd Avenue., Phoenix, Arizona.

Dated and received April 7, 1955:

"Our annual audit has just been completed by Dale and Eikner, Certified Public Accountants here in Phoenix, which revealed that the Maricopa County Chapter of your Red Cross expended during the year March 1, 1954 through February 28, 1955, $145,924.80 in giving service to the men in the Armed Forces and their dependents and to our Communities. It was necessary for the Maricopa County Chapter to receive a grant from the National Organization of $11,500 during this year to meet the obligations of our local Chapter, and this grant was necessary because we did not receive the necessary funds last year to take care of the budget set up by our volunteer Board of Directors. It is hoped that during this 1955 campaign, which is coming to a close, that we will raise enough funds to carry on our projects so necessary to the Community without assistance from the National Organization.

Our campaign at this writing is sixty per cent of its goal, and we would appreciate it if the following appeal could be made through your publication to the Medical Profession. Our records at this time show a total of 353 Physicians and 91 have sent in their memberships in the amount of $1,937, which is an excellent dollar average per membership. — (**Note date**

of this communication. This is a remarkable response so early in the campaign.) — However, 262 members of the Medical Profession have not, as of this writing, renewed their membership in Red Cross this year. It is hoped that a statement to the Medical Profession regarding these statistics will encourage them to become members of their Red Cross.

It is through the efforts of organizations, such as yours, that keeps Red Cross strong in our Community."

Note the above is from the Maricopa County Chapter. Organization in Arizona doesn't provide for a State Agency.

NEW PUBLICATION FOR RESIDENTS AND INTERNS

AN INTERESTING new publication has just come to our attention. It is entitled the "Mead Digest" and bears these words on its title page:

"Dedicated to the improvement of medical practice and published as a service to residents and interns by Mead Johnson & Company, Evansville, Indiana". A perusal of the first number would seem to indicate that the publishers are striving to live up to that dedication. The first issue contains, among others, articles bearing these titles: 1. How to Outfit an Office at Minimum Cost. 2. First Year Out. 3. How to Write a Letter of Application. These articles are well written and should be of considerable help to the young doctor contemplating the start of his practice. If there is any advertising hidden within the text material, we have not found it. Since the magazine is given free coverage, one must expect of course the advertising on the cover and occasional inserts.

Be that as it may, we are glad to call attention to another instance of the growing spirit of friendliness and cooperation which our many friends among the manufacturers of drugs and medical products are showing to the medical profession.

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Woman's AUXILIARY

NURSE RECRUITMENT LOOKS TO THE FUTURE

Mrs. Max Costin
Nurse Recruitment Chairman



Barbara Jane may be a future nurse.

ALTHOUGH Barbara Jane Hirsch is somewhat young to make a definite decision as to her future, she may want very much to be a nurse. The questionnaire, "Why Nursing as a Career", which was sent to us by the National Committee on Careers, was distributed to the 190 students who entered our three Diploma Schools of Nursing in this state last Fall. The answers came back as follows:

1. I always wanted to be a nurse since my childhood days of playing with dolls.
2. Recruitment program.
   a. Talks and discussions on courses in nursing given in the High Schools.
   b. Literature on nursing.
   c. Radio and Television programs.
3. Acquaintance with a nurse.

I am sure that all of you TV fans, looking in with your small fry, have been aware of the fact that at least half of the little girls interviewed say, "I want to be a nurse". Although they are like Barbara, too young to make a definite decision as to their future, the desire to take care of something is a very healthy, normal instinct which must be kept alive to make a good nurse in the future.

We are again cooperating with the Arizona State Nurses Association on state and local levels in a recruitment program. We have added this year to our Joint Committee on Careers in Nursing, representation from the Arizona Student Nurses Association.

One of the primary aims of the recruitment committee is to keep the public aware of the need for nurses; opportunities for the graduate nurse; types of nursing schools; and entrance requirements.

Our approach to this phase of the program has been through newspaper articles, TV and radio programs, films shown to various social and church groups, and distribution of pamphlets and brochures. We use publicity all year but make a concentrated drive during Nurse Recruitment Week. Governor Ernest McFarland proclaimed Nurse Recruitment Week for Arizona, February 13-20 inclusive, and Mayors carried the proclamation to their various communities.

When the student enters high school, our approach to nurse recruitment is through programs presented to general assemblies, Future Nurse Clubs, and the high school counselors. The counselors are key people. They prepare the curriculum for the prospective student; observe her emotional stability; physical defects; mental health problems; and in many cases guide her into her future career. To keep the counselors informed about the advancements in the Fields of Nursing Education, a sound pre-nursing curriculum, and the type of student best prepared for nursing, two workshops were held in the state. In December, Pima County held a "Symposium on Nursing Education", with a panel type discussion. In March, the state committee

on Nursing Careers, held a workshop in Phoenix, with a panel discussion on "How Can the Committee on Careers in Nursing Program be More Effective".

In Arizona, we have 10 active Future Nurse Clubs, and one in the process of being organized. The purpose of these clubs is to interest students in personal and community health; to encourage them to find out what nursing requires and offers; and to help them decide wisely about nursing as a career.

Our program comes to a close each year with our three Diploma Schools of Nursing holding Open House. St. Joseph's and Good Samaritan hospitals in Phoenix had open house February 26, with 175 students attending each hospital. St. Mary's Hospital in Tucson had open house March 19, with 181 students attending. The doll which Barbara Jane holds was given as a a door prize at St. Mary's open house. She is dressed like a St. Mary's senior student nurse even to the embroidered insignia on her sleeve.

In our program planning we cannot forget our own Auxiliary members. They must keep informed of our nurse recruitment program because in their daily living and their contacts with various social and church groups, they have opportunities to talk with girls about nursing. In Pima County, the recruitment committee had a program for the March Auxiliary meeting. They had a panel of two Auxiliary members, two Future Nurse Club members, and two student nurses from St. Mary's Hospital. The students from the club and the hospital injected so much enthusiasm into the meeting that it will long be remembered by the Auxiliary.

Although we have three excellent diploma schools of nursing in this state, and have a sound scholarship loan program for nurses entering these schools, the recruitment committee looks to the future for:

1. A collegiate school for nurses in this state, which would include graduate study.
2. Another School for Practical Nurses.
3. A school which includes male student nurses.
4. A scholarship program which would include loans for graduate study for the professional nurse and loans for practical nurses.
5. A Future Nurse Club in every high school.

Book REVIEWS

THE PHYSICIAN AND HIS PRACTICE by Eighteen Authorities. Edited by Joseph Garland, M.D. Little, Brown and Company. Boston — Toronto. 1954. Price, $5.00.

THE editor of one of the world's best medical journals, The New England Journal of Medicine, has produced a book which commands the attention of any physician whether he is just beginning his career, is nearing the end of it, or is in the middle of it. It is not so certain that the book should be recommended for the young man who is contemplating medicine as a career or for the old man who is reviewing the practice he had to quit. For the one it presents a frightening challenge of things to be done; for the other, it offers a disheartening reminder of things left undone. At least, if the young man will read it carefully and then will choose to be a doctor of medicine, one can be sure he has been bitten.

One man couldn't have written this book and one man didn't. Eighteen authorities wrote personal essays, each within his field of expert knowledge and experience, and the wise editor let each one have his say. The result is a delightfully readable collection of intelligent thinking about the practice of medicine. The propagandists might object that the text lacks homogeneity but most of us earning our living in medicine would be happy to loan this volume to any friend who asks, "Just what do you think about medical practice nowadays?" When, after reading it he says, "But there doesn't seem to be any answer," we can be content that our friend is an informed man. C. L. Robbins, M.D.

CORRECTION

On Page 154 of April issue of Arizona Medicine, first column, second paragraph, seventh line, should read:

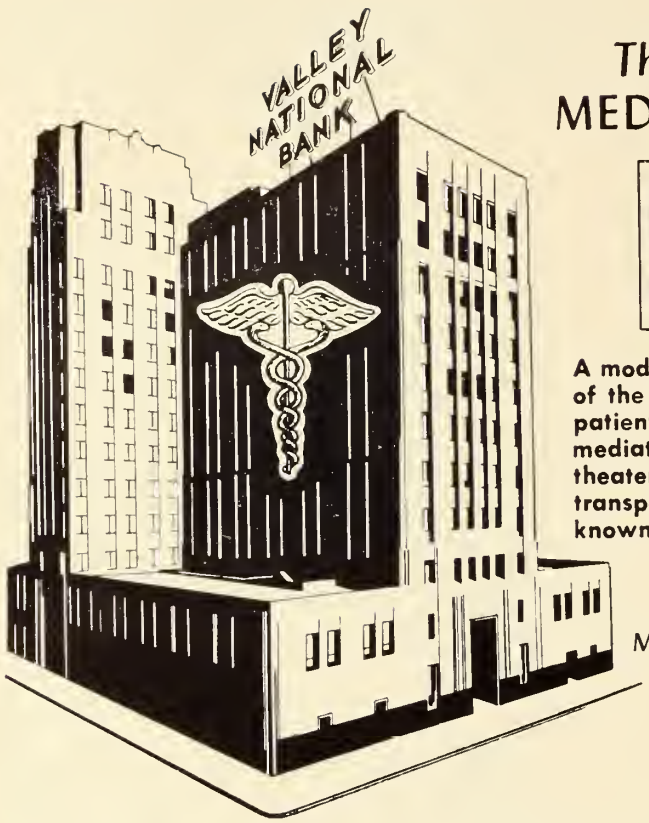
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ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL. 12, NO. 6 JUNE, 1955

Original ARTICLES

THE PBI-TSH TEST AS A MEASUREMENT OF THYROID ACTIVITY*

Joseph B. Raddin, M. D.
Phoenix, Arizona

RESEARCH for an accurate yet simple laboratory diagnostic test of thyroid function has continued for many years. Every physician who treats women urgently needs such a test in his daily practice. The female reproductive system is very dependent on adequate thyroid secretion for normal function. The general practitioner, internist, gynecologist and obstetrician(1) must be continually alert to the probability of thyroid imbalance being at least partly implicated in causing the "nervousness", menstrual irregularities, complications of pregnancy and other symptoms of which many unhappy and ill women complain. While some physicians are constantly alert to the possibility of thyroid dysfunction as a cause of illness in women, others are less aware of the share mild degrees of hypothyroidism play in disturbing a woman's sense of feeling well. Many a neurotic or psychoneurotic woman is a victim of abnormal endocrine function. From adolescence through the menopause every woman's good health(2) is much more firmly based on adequate thyroid function than is man's health. A review of currently available tests of thyroid function may be helpful if only to attract attention to the problem of diagnosing mild degrees of thyroid dysfunction.

The common test measuring basal metabolic rate is not and never was intended as a measure of absolute thyroid activity nor as a diagnostic test on which to base therapy for thyroid disorders.(1) The test measures oxygen consumption during a measured interval of time under basal physical conditions. The test is properly performed only when the same conditions are observed (preferably using the same apparatus) as were defined in setting up the standard tables for interpretation of results of the test. If the patient is hospitalized and the metabolic rate repeated on successive or alternate days under barbiturate analgesia (true basal condition) for a total of three tests, an entirely different set of standards should be used to interpret this averaged result than when the patient comes to the laboratory or doctor's office in the morning for a single test. There are many instrumental and human variables in performance of the test so absolute accuracy is not high and the information obtained only approximates the true basal metabolic rate.

The normal thyroid gland is responsible for or influences only about one-third to one-half of the basal metabolic rate in a healthy individual. Other known factors such as digestive processes and tissue metabolism account for a large proportion of the remainder. The unknown or unexplained portion may amount to 10 or 15% of the total. Therefore, at best, the rate of basal metabolism is only an indirect estimate and is not a direct measurement of thyroid function. It is more informative (not diagnostic) the greater the degree of hyperthyroidism or hypothyroidism present.

The percentage uptake of radioactive iodine (RAI) is an accurate measure of one thyroid function, *the ability of the thyroid to take up*

* Presented before the staff of Memorial Hospital, Phoenix, Arizona, March 21, 1955.

iodine, currently much discussed in the medical literature(3,4,5). It is a nuisance for the average clinician to perform and is not available to most physicians and patients. The material must be obtained specially and as it is dated, if the patient does not keep an appointment, new material must be secured. Measurement is by special technic with a Geiger counter which I am sure few clinicians will bother to purchase. The undesirable features of this method are the general unavailability of the radioactive iodine used, the cost of the instrument necessary to read the results and the complexity of the procedure for the patient, technician and physician as compared to the simplicity of method and the information of diagnostic as well as therapeutic value obtained by the PBI test to be described.

Total serum cholesterol and cholesterol ester values are useful differential information in cases difficult to diagnose but are not commonly considered to be diagnostic of absolute thyroid activity.

Today the most accurate measurement of thyroid function and the most practical test for general clinical use is the determination of protein bound iodine (PBI) also called serum precipitable iodine (SPI) (6). Now that the anterior pituitary thyroid stimulating hormone (TSH), (Thytopar, Armour) is available, the complete test consists of a measurement of the TSH effect on the PBI. This accurately explores the status of thyroid function in people with a minus 15 to a plus 15 BMR value range, many of whom do not have a normal thyroid function.

All hormone assays will be of much greater clinical value when blood serum levels of a hormone can be measured quickly and inexpensively by the medical laboratory available to every physician. The assays of hormones excreted in urine presently performed are only an indirect measurement of blood hormone values and therefore often give values which cannot be reconciled with the patient's apparent clinical health. When urinary excretion can be correlated with blood hormone levels much more valuable information is obtained. Therefore a technically simple and inexpensive test which measures blood hormone content is a goal for which chemists and laboratory research workers alike are striving. *The PBI is believed to measure the amount of thyroxine in the blood actually secreted by the thyroid gland*(10). The PBI-TSH test has most of these desirable features. The fact that PBI test results do not correspond well with BMR, RAI uptake, and cholesterol values does not deny the accuracy of the PBI test,(7) since they all measure different factors of thyroid function. In my experience correlation of PBI values with the patient's actual thyroid status has been excellent and has been the most useful guide to therapy.

With further investigation and reduction in cost to make the test more generally available, the relation of total serum iodine to protein bound iodine may prove to be of significant value. At present few people are willing to undergo the expense of both tests and clinical correlation is not as yet well understood (8,9).

This test of thyroid function is, or can be, generally available because only blood specimens are required which a physician can take at his office anywhere and mail to a laboratory; it is not necessary to take the patient to an instrument; it is not too technically difficult for any laboratory to perform when there is sufficient demand for it; it is a direct measurement of blood hormone value; unfortunately it is still a rather expensive test. The accuracy with which proper treatment of thyroid disorders is indicated more than compensates for the cost when the patient can afford to have any test performed.

The PBI-TSH test is performed as follows:

1. A fasting blood specimen is taken for basal PBI determination (and total serum iodine if the patient can afford the test).

2. 10 units of Thytopar (TSH-Armour) is given intramuscularly following withdrawal of the blood specimen.

3. 24 hours later a second blood specimen is withdrawn for PBI and total serum iodine values.

At the present time it is believed the total serum iodine value before and after a test dose of RAI is comparable to the values obtained with the Geiger counter. The serum iodine value in micrograms is a direct measurement. The counter measures per cent increase based on counter response and is not a direct measurement of total serum iodine nor protein bound iodine values. The RAI can be repeated with TSH to measure anterior pituitary hormone effect. In my opinion all the information obtained by using the RAI uptake test is obtained much more easily and in actual values of serum content of iodine and thyroxine by doing the PBI-TSH test.

The results of this test as outlined can be interpreted in many ways. *Little value can be attached to a single or isolated PBI value.* Normal values are given as 4 to 8 mcg. Clinically my impression is that 5 or 6 mcg. is a more normal lower limit. Certainly 10 mcg. or above has proved accurate for hyperthyroidism whereas 8 mcg. seems to be within the upper limits of normal. Note particularly that since no material containing iodine is used in performing the test, when unusual results are reported there need be no delay in repeating the test for confirmation. Much depends on the clinical experience of the physician in correlating the results of several tests of thyroid function with the patient's history and physical findings(11). There is no justification for the assumption that one BMR, PBI or radioactive iodine uptake test is diagnostic of normal or abnormal thyroid function.

Should the first PBI value be 5.0 mcg. and the second value 6:5 mcg. or more, a normal thyroid gland is suggested so far as its ability to produce thyroid hormones as well as its ability to respond to anterior pituitary regulation is concerned.

Should the first PBI value be 5.0 mcg. and the second 5.3 mcg., it is believed that this thyroid gland is not normal because it is unable to respond adequately to TSH stimulation. This condition has been called low thyroid reserve. If there is clinical and other laboratory evidence to suggest hypothyroidism, small dosage of thyroid extract is indicated as therapy. Should the first PBI value be below 5.0 mcg., certainly if below 4.0 mcg., the diagnosis of primary thyroid insufficiency would appear justified and thyroid medication mandatory. Since the thyroid is unable to respond to TSH stimulation, medication to increase anterior pituitary activity does not seem indicated.

Confusion may arise when the second PBI values does not increase 1.5 mcg. or more. In such an instance secretion of thyroid hormone is apparently adequate (if the first PBI is 5 mcg. or higher) yet the test is not normal since the second value is not higher than 5.3 mcg. In women menstrual irregularities or other nervous and physical complaints may be present such as vague malaise and unhappiness. A diagnosis of psychoneurosis does not relieve her distress or cure her symptoms. Thyroid extract does not seem indicated since PBI values of 5 are said to be normal. It would be well to repeat the test in a week without any therapy. If the PBI values are confirmed there is a satisfactory treatment without using thyroid extract but the subject does not come within the scope of this paper. It is a rather complex hormone balance procedure highly individualized for each woman.

If the first PBI value is 3.5 mcg. and the second value is 5.0 mcg. or higher, the suggested interpretation is hypothyroidism secondary to anterior pituitary failure. Since the thyroid gland CAN respond to TSH stimulation in a normal manner, it seems reasonable to postulate that the low first PBI value (suggesting hypothyroidism) is due to inadequate TSH secretion by that individual's own anterior pituitary gland. What is the correct therapy for such a case? Don't forget the effect of estrogen on thyroid function(2). Thyroid extract will relieve the symptoms and the patient will be satisfied. Thyroid substitution therapy however will not be curative and must be continued indefinitely. If there was a way to stimulate the anterior pituitary gland to secrete adequate amounts of TSH a more physiologic treatment would be available. Thytopar given daily is expensive and results of clinical trials in humans have been reported as disappointing. Good results can be obtained with therapy in addition to thyroid extract but again treatment is not within the scope of this discussion.

Hyperthyroidism is suggested when the first PBI value of 8 mcg. or higher, and following the dose of TSH, the second PBI value is elevated to 10 or 12 mcg. or more.

This PBI test of thyroid function is not dependent on hospitalization, patient relaxation co-operation as for a basal metabolic rate nor on an expensive instrument incorporating a Geiger counter using specialized skill to read nor on specially prepared iodine isotopes. It is easily performed on children, adults, and the aged and those who refuse to undergo a BMR. Only two blood samples and one intramuscular injection are required. Iodine preparations taken orally or by injection give such unusual PBI readings that suspicion is readily aroused and possibility of inaccurate laboratory procedures discounted.

A valuable feature of this test for thyroid function is that it is now possible to diagnose primary thyroid failure as well as secondary thy-

roid failure due to insufficient TSH secretion by the anterior pituitary gland. In other words, TSH is used to diagnose and differentiate primary hypothyroidism from hypothyroidism secondary to anterior pituitary insufficiency.

Previous thyroid or iodine therapy does not interfere with TSH effect. To obtain a true basal PBI value, thyroid and iodine administration should be stopped for two months. Thyroid extract medication should induce a maximal suppression of thyrotropic (TSH) secretion when enough thyroid extract is given to satisfy body needs e. g. the basal PBI value should then be normal whether or not the PBI value was normal before thyroid therapy. If the individual has been exposed to iodine, such as painting a laceration of the skin with tincture of iodine, or by administration of KI the first PBI value will not be truly basal. The thyroid should normally respond to TSH stimulation as demonstrated by an appreciable increase in PBI value following TSH administration even when that individual has been taking thyroid extract or has been exposed to iodides(4).

When a BMR is reported as being within plus 15 to minus 15 range many physicians consider thyroid function as normal. Evidence is now accumulating that many nervous and ill women whose BMR is within this normal range do have abnormal PBI values or abnormal radioactive iodine uptake. My clinical experience has been that the PBI test frequently reveals mild degrees of over and under thyroid function not suggested by the BMR. It often happens that there is little agreement or considerable disagreement with results when several types of tests of thyroid function are performed on one individual. Which test should be considered most reliable? Disagreements in opinion are often due to personal experience of a physician with a particular test. I attach little importance to BMR tests. Based on clinical results, the TSH effect on PBI values has been most helpful in my practice. Radioactive iodine uptake is a nuisance and I seldom request the procedure. Serum cholesterol values are of some help. No single test now available will diagnose normal or abnormal thyroid gland function. All of the tests give helpful information. Final diagnosis still must be based on detailed clinical and endocrine history and physical examination of the patient plus evaluation of such laboratory tests as the patient can afford.

SMMARY

With continued accumulation of clinical data it seems that the PBI — TSH test should become a valuable addition to the other tests now available to evaluate actual thyroid gland function. This test in my opinion is more accurate, dependable, practical and informative than any other measurement of thyroid function. It can be made available to every physician.

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PRACTICAL CONSIDERATIONS IN DIGITALIS THERAPY

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DIGITALIS was given to the medical professional by Sir William Withering in 1785. In the 180 years that have passed since that time, it remains as the only drug we have which is effective in congestive heart failure by acting at the source of the difficulty, namely the failing myocardium. All other agents that we now use, such as sodium restriction, diuretics, resins, oxygen, sedation, and so forth, are all ancillary measures, but digitalis remains the one drug the physician has which can strengthen the weakening muscle in the failing heart.

There are many different preparations of digitalis which are available to the physician today. Some of the advantages and disadvantages of these will be pointed out briefly; it should be stated at the outset, however, that one important practical consideration is digitalis therapy is for the particular physician to become well acquainted with the use of one particular form of digitalis, to understand its limitations, its toxic reactions, its dosage, its variability, etc., and then to use that preparation as long as it serves him satisfactorily.

The digitalis preparations that we use today are derived from two plants. One is called Digitalis purpurea and the other Digitalis lanata. From purpurea we can derive digitoxin and gitalin. From lanata we derive these same two compounds and in addition we can also procure digoxin.

Whole leaf digitalis, which is still widely used and which is an excellent preparation, is derived from the leaves of Digitalis purpurea in the second year of their growth. It may be given orally or parenterally but is used almost exclusively by the oral route. Approximately twenty per cent of it is absorbed from the gastro-intestinal tract and the digitalizing dose varies from 1.2 to 2 grams. The maintenance dose will vary from ¾ to 3 grains daily. A word may be said at this juncture about the old Tincture of Digitalis and this word is merely to condemn it. It is little if at all used today, and its chief faults lie firstly in the fact that it deteriorates with age and secondly in the fact that accurate dosage which should be measured in minims is not always possible because it is usually dispensed in drops, and drops and minims unfortunately are not always synonymous.

A similar whole leaf preparation exists from the lanata plant and is known as Digilanid. It contains all three ingredients of digitalis lanata and is marketed in a tablet which contains ⅓ of a milligram. The full digitalizing dose of this preparation varies from three to eight milligrams and the average daily maintenance dose is one-third of a milligram. It is little used today and offers no particular advantages over other preparations which will be mentioned below.

Digitoxin is probably as widely if not more widely used than any of the other preparations of digitalis today. The reason for this, in the light of its pharmacology and physiology, is a bit difficult to understand. It was originally very popular because the medical profession was told that 1.2 milligrams of this drug would suffice to digitalize any and every cardiac patient. Actually, we know today that the digitalizing dose of this preparation varies as it does with all other preparations of digitalis. In the case of Digitoxin it varies from 1.2 to 2 milligrams. It is one hundred per cent absorbed from the gastro-intestinal tract but it has the peculiar property of fixing itself to blood proteins so that it is the most slowly excreted digitalis preparation we have. The rate of excretion will vary from individual to individual but probably no more than forty per cent of the drug is excreted within two weeks after its use is discontinued, and it may take anywhere from four to six weeks to rid the patient completely of this preparation. This, in the opinion of the author, offers a marked disadvantage in that if one runs into toxic reactions, it takes an inordinately long period of time to rid the patient of them. To repeat, this is a marked disadvantage and since there are no real advantages, such as a uniform digitalizing dose or a uniform maintenance dose, I would venture the belief that there is no place in modern day digitalis therapy for this drug. The author uses it only in those patients who have been on it for a long period of time and who are apparently doing well with it. It has been many years since it was prescribed by him for a new patient.

A good present day all-purpose digitalis for

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general use is Gitaligin® which is marketed in a .5 milligram tablet. This too is completely absorbed from the gastro-intestinal tract, and following discontinuance of its use it is almost completely excreted in anywhere from four to seven days. It has one particular advantage which is unique and places it apart from all other digitalis preparations. The digitalizing dose of this drug, which varies from 4.5 to 8 milligrams and averages 6.5 milligrams, is approximately one-third of the toxic dose. With all other preparations which are available to us, the digitalizing dose is two-thirds of the toxic dose. We have here then a preparation which has a wider margin of safety and which will do anything therapeutically that any other preparation of digitalis will. It may be said to be the choice except in advanced myocardial disease with much fibrosis where excessive irritability is feared. In this particular case, the use of digoxin is recommended. The digitalizing dose of this preparation, which comes from Digitalis lanata varies from two to five milligrams and averages 3.75 milligrams. It comes in a tablet containing .25 milligrams. It is completely absorbed from the gastro-intestinal tract and is completely excreted within forty-eight hours after administration is discontinued. In extremely sick and irritable hearts therefore it is the safest oral preparation to use, since if toxic irritable effects are encountered these are quickly dissipated.

Several other preparations should be briefly mentioned. Cedilanid has an extremely short latent period of activity and when given intravenously it manifests some effect in thirty to sixty minutes. It is also eliminated very rapidly and therefore becomes one of the drugs of choice for intravenous therapy when it is desired. Because of its rapid excretion, it is not recommended for maintenance use. The parenteral solution contains .2 milligrams per cc., and the digitalizing dose varies from four to twelve cc. The maintenance dose is two cc. every six hours intravenously and must deliberately be rather large, again because the drug is so rapidly excreted.

Lastly, a word about the Strophanthus derivatives. There are two that are available to us, one known as Strophanthus K and the other Strophanthus G or ouabain. These are both extremely rapidly acting preparations which are not at all absorbed from the gastro-intestinal tract and must therefore be given intravenously. They are for use only in dire emergencies when the physician may be certain that the patient has received no digitalis for one to two weeks prior to its administration. The initial digitalizing dose for the K preparation is .5 milligrams and for the G preparation .25 milligrams. Successive doses of .1 milligram may be given at intervals of thirty to sixty minutes until full digitalization is obtained. At the time that these drugs are given, the maintenance dose of any of the oral preparations may be started simultaneously and the patient may then be maintained on these as long as digitalization is required.

In summary then, with reference to the type of digitalis used, the following practical points may be mentioned. The physician should become thoroughly familiar with one or several preparations and use these in his treatment of heart disease. For routine oral use, Gitaligin® is recommended with the single exception that Digoxin should be used in those patients who appear to have extremely sick hearts. Digitoxin has no current place in digitalis therapy. For intravenous use, Cedilanid is the preparation of choice in the doses mentioned above unless the patient presents an extremely critical and urgent situation, and then one of the Strophanthus drugs should be given.

Next, a word or two about the method of action of this drug in the human heart. There are several major concepts of its activity today. The first is its ability to slow the heart and this is mediated through several different pathways. It will slow the heart by depression of the Bainbridge reflex, it will also slow the heart by stimulating the vagoreceptors in the carotid sinus, and it will further slow the heart by its direct effect on the auriculoventricular junction. This effect is one of depression of condition. The ability of digitalis to slow the heart was originally thought by such competent observers as James McKenzie and Sir Thomas Lewis to be its chief function. Today we feel that the slowing effect of digitalis is secondary to the improvement that occurs in the sick failing heart. Since its primary effect as used today is not that of slowing, the practical consideration to be derived from this is that digitalis should not be withheld in the failing heart simply because there is a slow rate. While it is perfectly true that results in this type of patient will not be as drama-

tic as they are in the patient with the rapid rate, the drug still has definite value even though the rate may originally be slow.

A second effect of digitalis is that of lowering increased peripheral venous pressure. The practical application of this will be mentioned later.

A third, and undoubtedly its chief beneficial effect, consists of its direct action on the myocardial cell to improve minute volume output of the failing heart. It prolongs the diastolic filling time and concurrently shortens the length of the fiber in diastole. Since the amount of oxygen used by the cell is proportionate to its diastolic length, it follows that when a failing heart is digitalized it will deliver a more powerful contraction and simultaneously use less oxygen in doing so. This, of course, enormously increases the efficiency of such a failing heart. In addition, digitalis is capable of directly increasing the irritability of the myocardium and thereby further produces a more powerful contraction during systole. All of these factors are beneficial in the failing myocardial cell. If, as is rapid, there will be further benefit by slowing, but it should again be emphasized that it is not necessary to have a rapid rate to get appreciable benefits from digitalization.

One further point might be made as to the current concept of the action of digitalis, and practical application of this will be mentioned when toxic reactions of the drug are discussed. Our present conception of the contraction of the myocardial individual cell is that this cell contains a contractile muscle system consisting of myosin, a protein conjugate, and its precipitin, known as polymerized actin. These two large molecules are attracted by colloidal forces and are kept separated in the cell by potassium ions. The excitatory impulse reaching the cell depolarizes cell membrances which become permeable to cations permitting potassium to escape. Digitalis aids the escape of potassium from the cell, and when the potassium leaves the cell the two protein systems mentioned above are joined and muscle contraction results. The importance of potassium in digitalis therapy, which is briefly mentioned here, will be stressed again later.

The indications then for digitalis therapy can be restated on the basis of the facts mentioned above. It is indicated for all types of low output failure, such as failure associated with hypertensive disease, ischemic disease, and valvular disease. In all such hearts it will improve the muscle contraction of the heart, it will increase the minute volume output with the expenditure of less oxygen, and this, it should be repeated, constitutes its chief value in the treatment of congestive failure. It is also indicated in the prevention of recurrent paroxysmal supraventricular tachycardia, and here its ability to slow the heart through the mechanisms mentioned above, come into play. Its use in the treatment of auricular flutter and of rapid auricular fibrillation, is based on the same slowing concept which make it so valuable in the treatment of paroxysmal tachycardia.

From this we can pass rapidly to the contraindications to the use of the drug. It should not be given merely to slow a rapid heart unless the physician feels that the heart is diseased. When a normal heart is digitalized, its output diminishes anywhere from 25 to 30 per cent of the predigitalization level. Therefore, digitalization not only fails to improve a heart which is already normal, but probably diminishes its efficiency. It is contraindicated in constrictive pericarditis where the diastolic length of the fibers is already shortened mechanically. The fibers are not actively diseased or weakened but are rather mechanically restricted and digitalis will be of no value here. It is further contraindicated in ventricular tachycardias because in this situation we are already dealing with a ventricular musculature which is excessively irritable and the further irritability produced by digitalis may produce fatal ventricular fibrillation. For the same reason, it is generally considered to be contraindicated in multiple premature ventricular contractions unless the physician feels that these contractions are a manifestation of a weakened failing myocardium. It is useless in other types of cardiac failure where we are dealing with a mechanical defect, such as an excessively tight mitral stenosis, a pedunculated auricular thrombus which is occluding the mitral orifice, and it is of little value in heart disease where there is a curable causative factor such as myxedema, hyperthyroidism, anemia, acute rheumatic fever, or diphtheria. Lastly, it is frequently of little or no value, and is occasionally harmful, in patients with so-called high output failure. These include patients with severe pulmonary emphysema, and patients with mechanical failure based on a peripheral arteriovenous aneurysm. The high venous pressure that these patients have is compensatory and

permits their hearts to produce an increased cardiac output per unit of time. If this excessive venous pressure, which is compensatory, is diminished by digitalis, and it was mentioned above that this is one of the physiologic actions of the drug, we are placing an extra work load on such a heart by digitalizing it.

Next we should briefly consider the problem of digitalis toxicity. This produces symptoms and signs which are referable chiefly to the central nervous system, gastro-intestinal system, and cardiovascular apparatus. In the order of appearance, the usual subjective signs of toxicity are neuralgias, paresthesias, malaise, headache, anorexia, nausea, vomiting, diarrhea, visual disturbances, and psychoses. With reference to the heart, it can produce premature ventricular contractions which alternate with normal contractions producing pulsus bigeminy. Interestingly, the arrhythmia occurring with digitalis poisoning produces bigeminy which arises in the right ventricle, whereas bigeminy from all other causes invariably arises in the left ventricle. It can and does produce any and all types of cardiac arrhythmias.

The incidence of digitalis toxicity has increased markedly within the past several years and there are probably five valid reasons for this. The first may be said to be the increased intravenous use of the drug with its concomitant overloading of the patient with digitalis. Second, is the dogmatic oversimplification of dosage, mentioned above with particular reference to Digitoxin. Third, is the use of Digitoxin itself and its abnormally long period of retention within the blood stream. Fourth, is the fact that the prolonged life-span that we are giving our cardiacs today, leaves us with many sicker patients who are more prone to develop toxic reactions to digitalis. Lastly may be mentioned the increasing dependence on electrolyte manipulation, such as sodium restriction, the use of mercury, resins, carbonic anhydrase inhibitors, and more recently the use of Cortisone. All these agents induce changes which alter the threshold of the myocardium to intoxication by changing its permeability to the passage of electrolytes.

An mentioned above, there is ample evidence today to link the potassium ion to the therapeutic and toxic effects obtained with digitalis. Since digitalis aids the escape of potassium from the cell, it seemed reasonable to assume that some of its toxic effects may be due to excessive potassium loss. This is clinically borne out by the fact that potassium will correct all arrhythmias produced by digitalis. A single dose of five or six grams of any potassium salt by mouth, or an intravenous dose of four grams of a similar salt, will correct within a matter of several hours practically all rhythmic disturbances of the heart which are produced by an excessive dose of digitalis. In such patients, the continued use of one gram of potassium daily may serve as a protective agent against future toxic difficulties with the digitalis preparation that the patient is taking. It is not, however, recommended that all patients who are taking digitalis be routinely given potassium since many of these patients have disordered kidney functions and will develop potassium retention and the poisonous effects of hyperkalimia.

One practical procedure which is frequently of use in determining whether a patient is properly digitalized or not, and it might be emphasized that this is an extremely common problem in the management of sick hearts, involves a digitalis tolerance test which has recently been made available to us. It employs the use of acetyl strophanthidin which is an extremely rapidly acting preparation of digitalis which is given intravenously. It is effective in from 30 seconds to five minutes after administration, reaches its peak of activity in approximately twelve minutes, persists for about two hours, and, if it produces toxic reactions, these are dispelled in about thirty minutes. In the hypothetical patient who has been on digitalis and whom it has not been determined whether digitalization is inadequate, adequate, or has been pushed to the toxic level, 1.2 milligrams of this drug may be dissolved in 20 cc. of a 5 per cent dextrose solution. Five cc. of this mixture, or .3 milligrams of the drug, may be given every five minutes, until a toxic or therapeutic response is obtained. A toxic response would be measured by the appearance of any arrhythmia, chiefly premature ventricular contractions or by signs of auriculoventricular block. A therapeutic response can be measured by any of the usual signs which we see in the patient who responds to satisfactorily digitalization. If our theroretical patient is satisfactorily digitalized, a toxic response will usually be manifest after the second dose of the drug. If the patient is overdigitalized, a toxic response will follow the first

dose. If the patient is underdigitalized, then a therapeutic response will follow the second or third dose, and if the therapeutic response does not appear until after the fourth or last dose, then it may be assumed that full digitalization is necessary.

These then, in brief, represent, in a very sketchy fashion, some of the pertinent physiological and pharmacological principles underlying the use of this drug and the practical applications of these principles. With the intelligent use of this drug, which, it should be repeated, is the single agent we have which acts directly on the failing myocardium, our sick cardiacs will live longer and will live more comfortably for this longer life span. If we use the drug properly, know why we are using it, know what effects we are attempting to obtain, and if we are prepared to meet toxic reactions when we encounter them, our patients cannot help but gain practical benefits from the principles outlined above.

CIVIL DEFENSE ISSUE

AUGUST, 1955

THE Civil Defense Advisory Committee of the Arizona Medical Association has prepared a manual of civil defense. This will consist of a number of papers dealing with various aspects of the subject and written by different members of the committee.

The entire scientific section of the August issue of Arizona Medicine will be devoted to this manual.

If there is sufficient demand the manual may be made available as reprints.

ED.

Laboratory Medicine

RAPID DIAGNOSTIC METHOD FOR ENTEROCOCCI

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IN instances of bacterial infection of organs located below the diaphragm which are produced by Streptococci alone, or in combination with other bacteria, the problem of differentiation of Enterococci (Lancefield Group D Streptococci) from other Streptococci, aerobic or facultative anaerobic species, is of prime importance. The importance of differentiation is based on the fact that Enterococci are resistant to Sulfa-drugs and only partially susceptible to antibiotics i.e. penicillin, chloromycetin, terramycin and aureomycin.

Cultural and growth characteristics of Enterococci may cause some confusion, broth cultures may show diplococcal and short chain forms which require further differentiation, and solid media cultures such as blood agar may show gross colony characteristics similar to other forms of bacteria. It is evident that proper differentiation and identification of this group of Streptococci requires diligent searching, Gram staining and subculture procedures without consideration for the time element which is of essence in the present day methods of rapid therapy.

The following procedure has been successfully employed, by the author, in differentiation and identification of Enterococci in single or mixed infections;

A. Centrifuged specimen is Gram stained and examined for presence of Gram positive cocci in pairs or short chains.

B. In addition to routine media employed for culture procedures at 37° C, innoculate the following media and incubate at 45° C, in water bath or incubator, for 18-24 hours.
   1. Enterococci Presumptive Broth(1).
   2. 6.5% NaCl Broth adjusted to pH 9.6. (The author employs Heart Infusion Broth(2) with NaCl to give final concentration of 6.5%. The pH of the broth is adjusted to 9.6 prior to autoclaving.)(3)

C. After 18-24 hour incubation at 45° C., check culture tubes and interpret as follows;
   1. Enterococci Presumptive Broth
      a. Change in color, from blue to yellow indicates acid production, and presence of turbidity is presumptive for Enterococci. Growth of Gram negative rods and other gram positive bacteria is generally inhibited by constituents of culture media. Gram stain for presence of gram positive cocci in pairs or short chains.
   2. 6.5% NaCl Broth
      a. Gram stain for presence of Gram positive cocci in pairs or short chains. Presence of other types of bacteria i.e., Gram negative rods, does not invalidate the screening test.
   3. Presence of Gram positive cocci in both media is diagnostic for Enterococci.
   4. Report of presence of Enterococci can be made, and culture contained in Enterococci Presumptive Broth employed for species determination at no sacrifice in accuracy for medication purposes.

This procedure lends itself to institution in any laboratory doing diagnostic bacteriology. Since the special media are innoculated and incubated at the same time as routine procedures there is no delay in making a diagnosis of presence of Enterococci. In general work the author has found that 18-24 hours incubation is sufficient for conclusive results. Occasionally a culture in Enterococci Presumptive media may show slight acid production (green color), reincubation for 12 hours more will determine if acid production will be complete. If no further change occurs it can be concluded as negative for Enterococci.

SUMMARY

A rapid diagnostic method for Enterococci is described. This is sufficiently simple to be suitable for employment in practically any diagnostic laboratory.

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PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE NO. 37461

A seventy-five-year-old man entered the hospital because of pain in the left abdomen and lower back.

The day prior to admission he noted the onset of steady ache in the left lower quadrant that gradually spread to the left lumber area. This was made worse by moving and was relieved slightly by lying still. He vomited once. His physician thought he was able to palpate a pulsating mass in the left upper quadrant. There had been no change in bowel habit nor any bloody or tarry stools. There was no frequency, dysuria or other urinary symptoms.

Thirty years before admission he was told that he had "heart trouble". Thirty-five years prior to entry he had "nephritis" following an upper-respiratory infection, but there were no known sequelae. For many years he had had right-lower-back pain that was relieved by sacroiliac manipulation. He had never had pain in the left lower back.

Physical examination revealed a man in no distress. The heart was enlarged and aortic systolic and aortic diastolic murmurs were heard (these same murmurs had been present unchanged for many years). The left side of the abdomen was tense and full and at least one observer thought that there was slight pulsation in the area. The liver edge was palpated two fingerbreadths below the costal margin. No other organs and no masses could be palpated. Strong pedal pulsations were present. A moderately enlarged prostate was smooth, nonnodular and nontender. Reflexes in the knee were present; those in the ankle were equivocal.

The temperature was normal and the pulse 85. The blood pressure was 180 systolic, 90 diastolic.

Urinalysis showed a specific gravity of 1.024 and gave a + test for albumin; there was an occasoinal red and white cell and an occasional granular and hyaline cast in the sediment. Urine cultures and smears from the bladder and left kidney were negative for growth or organisms. Examination of the blood disclosed a hemoglobin of 10.5 gm., a red-cell count of 3,630,000, normal platelets and a white-cell count of 12,900, with 86 per cent neutrophils. A stool was guaiac negative. The nonprotein nitrogen was 38 mg. per 100cc. A sedimentation rate was 61 mm. in one hour. The prothrombin time was normal. An electrocardiogram showed well marked left-axis deviation. X-ray films of the chest demonstrated enlargement of the left ventricle and an extremely tortuous and calcified aorta. An abdominal film showed normal sacroiliac and hip joints. The right kidney appeared grossly normal but the left kidney was not outlined and there was a suggestion of fullness just above the left iliac crest. There was no definite area of calcification in the abdomen. Intravenous pyelograms revealed a normal right kidney; the left was either enlarged or displaced somewhat laterally. An ill defined soft-tissue mass about 10 cm. in its greatest diameter overlay the lower pole of the left kidney and psoas shadow. Both kidneys excreted contrast substance in diminished concentration. The right urinary passages were not grossly remarkable. On the left an arcuate density that apparently represented the pelves and upper ureter was present to the left of the second lumbar interspace. Retrograde pyelograms showed good filling of the left urinary passages. The calyces were not remarkable. The kidney appeared displaced slightly laterally and considerably anteriorly. The pelves and upper ureter were displaced upward and medially respectively. The line of the pelvis and ureter outlined a rather rounded shadow. A barium-enema examination showed multiple diverticula but no evidence of intrinsic involvement of the colon. The descending colon just above the iliac crest was displaced outward by the mass.

The day following admission the left lower back pain had subsided considerably without therapy and the patient was ambulatory, com-

plaining only of some weakness without much pain. The abdomen was soft and moderately distended. Just below the margin of the ribs on the left there was an area that was tender and tense. It was not possible to outline the boundaries of this area. For the next few days his condition remained unchanged, there being only slight discomfort and no changes in the physical findings. The temperature varied between 99 and 100°F. The white-cell count on the fourth day was 20,200, with 77 per cent neutrophils.

On the tenth day an operation was performed.

DR. PRESTON BROWN

The case today is a 75-year-old man who entered the hospital because of pain in the left abdomen and left side of the lower back. This pain, developed within the 24 hours preceding admission, apparently was not equisite. It was accompanied, for all practical purposes, by not a single other symptom. The man was found to have an old chronic arterial selerosis, with damage of the aortic valve and calcification of the aorta. He had a high pulse pressure but no other manifestations of cardiac disability, unless it would be a slight enlargement of the liver upon palpation. His blood pressure was 180/90, his urine showed slight disturbance of kidney function, as manifested by occasional red and white cells, one plus albumen, and occasional casts. He was slightly anemic.

From this point on, the diagnosis hinges entirely on the findings elicited by retro-grade pyelography. The right side of the urinary tract was normal. The left kidney was displaced laterally and anteriorally by a spherical space-occupying lesion, which displaced the pelvis of the kidney and the upper ureter upward and medieally, respectively. In addition, the barium-filled bowel was displaced laterally.

In a case such as this it seems unnecessary to go through the entire catalogue of every conceivable retro-peritoneal lesion, that might be thought of. The lesions that appear most likely are an aneurysm of the left renal artery, which however, might show some evidence of calcification in the x-ray (and there was none), a cyst of the lower medial pole of the left kidney, or a hemorrhage surrounding the left kidney, particularly on the medial side; in addition, it would be possible that the man had developed a sarcoma or fibro myoma in this region. None of these latter possibilities seem too likely. It would appear from the history of a rather abrupt onset of the pain, and the lesion, that there must have been a pre-existing mass in the area under consideration which had undergone some acute stage, to transform it from a symptomless tumor, into one accompanied by pain. The evidence of serious infection does not lead us to suspect anything in the way of an abscess, and it's much more likely that the accident that took place was a hemorrhage either into, or about, the tumor; or, indeed, primary hemorrhage, resulting from his old arterial selerosis into the areolar tissues surrounding the medial surface of the kidney.

The most likely lesion that could lead to this sequence of events would be a solitary cyst, well-known to localize in the lower pole of the kidney, and thus displace the kidney upward. A hemorrhage into such a cyst as a result of the arterial sclerosis could easily produce the painful symptoms of which the man complained and result in the mild degree of anemia and low-grade febrile reaction that he exhibited on admission to the hospital. *And my diagnosis would be*: A SOLITARY CYST OF THE KIDNEY, WITH HEMORRHAGE INTO THE LUMEN OF THE SAME.

SECONDARY DIAGNOSIS: ANEURYSM OF THE LEFT RENAL ARTERY.

DIFFERENTIAL DIAGNOSIS

Dr. George Gilbert Smith: "A moderately enlarged prostate was smooth, nontender and nonnodular." This does not say whether it was soft or hard. I do not think this statement is of any importance here, but I want to call attention to the frequently expressed idea that a malignant prostate must be nodular. The diagnosis of carcinoma should be made before the prostate reaches a nodular stage, that is, before there are definite nodules on the surface of the gland. A certain irregularity in the consistence of the gland is important.

Will you show the x-ray films now, please?

Dr. Stanley M. Wyman: The enlarged left ventricle and the tortuous calcified aorta are well seen in the films of the chest. There is no evidence of active disease. The single film of the abdomen taken at the time of entry shows normal shadows of the liver, the right kidney and the spleen. The left kidney is poorly outlined and there seems to be an unusual soft-tissue mass in the left flank just above the iliac

crest. The margins of it cannot be well defined, largely because of a considerable amount of gas in the bowel. Two days later more films again show the right kidney quite well outlined and the left kidney replaced by a soft-tissue mass extending down just above the iliac crest. The left kidney cannot be outlined separately from this shadow. After introduction of contrast substance the right urinary passages appear normal. On the left the upper calyces are quite well seen and are lying more laterally than usual. The arcuate density described appears to represent the pelvis and upper ureter displaced upward, and the soft-tissue fullness is continuous in the area below this. This was a constant finding on several films. It is confirmed by retrograde examination showing something lying on this region somewhat posteriorly and inferiorly to the kidney and inseparable from the shadow of the kidney. There is no evidence of calcification in this mass. Ther eis no evidence of invasion of the pelvis or calyces.

Dr. Smith: This is the history of a seventy-five-year-old arteriosclerotic man who had a sudden dull ache, so far as I know unprovoked by any factor such as trauma, sudden effort or a fall. When I say "sudden" I mean it apparently appeared within one day – it was not instantaneous. That dull ache began in the left lower quadrant, worked up into the left lumbar region and within forty-eight hours had largely disappeared. In its early phase it shifted and it was not at all like the pain that one would expect from a condition that had been going on for quite a long time – such as a renal tumor or cyst. Renal cysts are not likely to cause much pain, but a renal tumor of an advanced degree may involve the lumbar muscles and may cause pain of this general type.

What other facts do I find in going over this record besides the sudden development of ache in the left lower quadrant? This patient also had anemia, fever, leukocytosis and a high sedimentation rate that persisted during the five days from the time of entry until he was operated. The x-ray films show the mass below and apparently in connection with or overlying the left kidney. I think I can see on one of these films the very well defined lower edge of the mass. It shows no irregularity except that it is not perfectly symmetrical. There was a question of there having been pulsation in the mass. I believe two observers thought there was. The ureter was pushed medially, the kidney was pushed outward and upward and the colon was pushed outward. I believe these findings indicate that this was a retroperitoneal mass. On the negative side there was no evidence of invasion of the renal parenchyma found on the x-ray examination. The calyces looked perfectly normal, but on the intravenous pyelogram they were not plainly seen. If there were a tumor of the lower pole of the kidney, one would expect it probably would either draw over the lower calyx and make it elongated and thin or blot it out entirely, but there was nothing like that to suggest an actual condition in the kidney itself. The distance from the lower calyx to the lower edge of the mass was greater than one would expect it to be if this line really represented the lower edge of a normal kidney.

The possibilities that one considers in the case of a large retroperitoneal mass are renal cyst, renal tumor, carbuncle of the kidney and a retroperitoneal tumor that is not connected with the kidney at all – one of the lymphoblastomas, perhaps. I cannot believe for a moment that this mass was a cyst. There were too many symptoms. It was certainly not an uncomplicated cyst. I think the patient had not been ill long enough and had not had a high enough temperature for this to be a carbuncle of the kidney. The picture suggests to me a rather sudden letting loose of fluid of some type close to the kidney, within Gerota's fascia, which I believe is represented by this line. Such a fluid, if it extended over the kidney, would tend to blot out the outline of the calyces, as shown in the intravenous pyelogram. If the fluid were blood, this would account for the anemia, for the increasing white-cell count and for a greatly increased sedimentation rate.

The diagnosis, it seems to me, is not at all clear, but I do not believe that the entire picture could be accounted for by tumor, although tumor may have been a factor. I would rule out renal cyst. I think the mass was too closely connected with the kidney to be a retroperitoneal tumor of nonrenal attachment. There were not enough acute symptoms for a renal carbuncle.

I believe the picture could be explained by sudden escape of blood into the perirenal space, Gerota's fascia, which would cause an aching pain – an ache that would shift as the condition extended and would tend to disappear with-

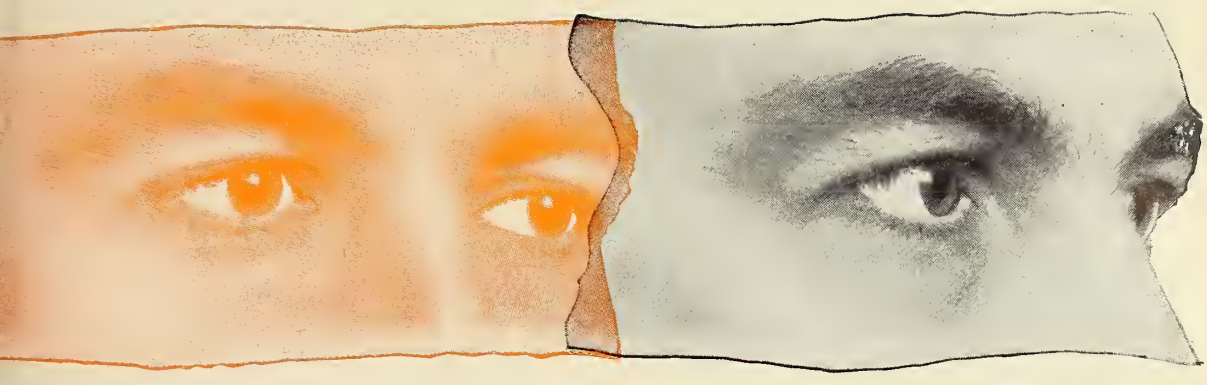
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out anything particular being done for it as the tissues became accustomed to the increased pressure from within. I do not know the origin of the hemorrhage. It may have been a ruptured aneurysm, not a very large one, which would account for the pulsation if the pulsation had really been present. It may have come from a tumor of the lower pole of the kidney. I hope I am not saying this to cover my retreat. I have never seen a tumor bleed extrarenally to that extent. I believe the condition was caused by hemorrhage and I would think the most likely source of it was a rupteured aneurysm.

Dr. F. Dennette Adams: Did Dr. Smith consider a ruptured diverticulum?

Dr. Smith: From where?

Dr. Adams: The gut.

Dr. Smith: The barium-enema examination did not show anything. I think that if the mass were due to discharge from the bowel the x-ray films might have shown some barium within the mass. A perinephric abscess may arise from a diverticulitis.

Dr. Saul Marcus: I should like to ask Dr. Smith if he has ever seen a case of a perinephric abscess without temperature but with symptoms somewhat similar to this. I have seen two such cases that fooled me. At operation they were simply perinephritic abscesses.

Dr. Smith: Yes; I have seen that too, but I do not see how that could explain the sudden onset of ache unless there was a rupture of some false membrane. I think there would have had to be a good deal of pressure to cause the ache, and it would not clear up as quickly as it did.

Dr. Benjamin Castleman: This patient was operated on by Dr. Arthur Allen and Dr. Colby together. Perhaps Dr. Colby would tell us the preoperative diagnosis and what was found.

Dr. Fletcher H. Colby: All of us who saw this patient were unable to come to a satisfactory diagnosis. I think Dr. Smith is to be complimented for coming as near an accurate diagnosis as I believe could be made. The sudden onset of this patient's pain and symptoms was of course the outstanding feature of the whole case. It seemed to us, — and perhaps this was not brought out in the protocol as well as it might have been, — that this man had a very easily palpable large mass, as large as a grapefruit, in the left side of the abdomen. It was not very tender. The nearest we could come to a diagnosis was a retroperitoneal tumor with hemorrhage into it.

CLINICAL DIAGNOSIS

Retroperitoneal tumor with hemorrhage into it.

DR. SMITH'S DIAGNOSIS

Perinephric hemorrhage, from ruptured aneurysm.

ANATOMICAL DIAGNOSIS

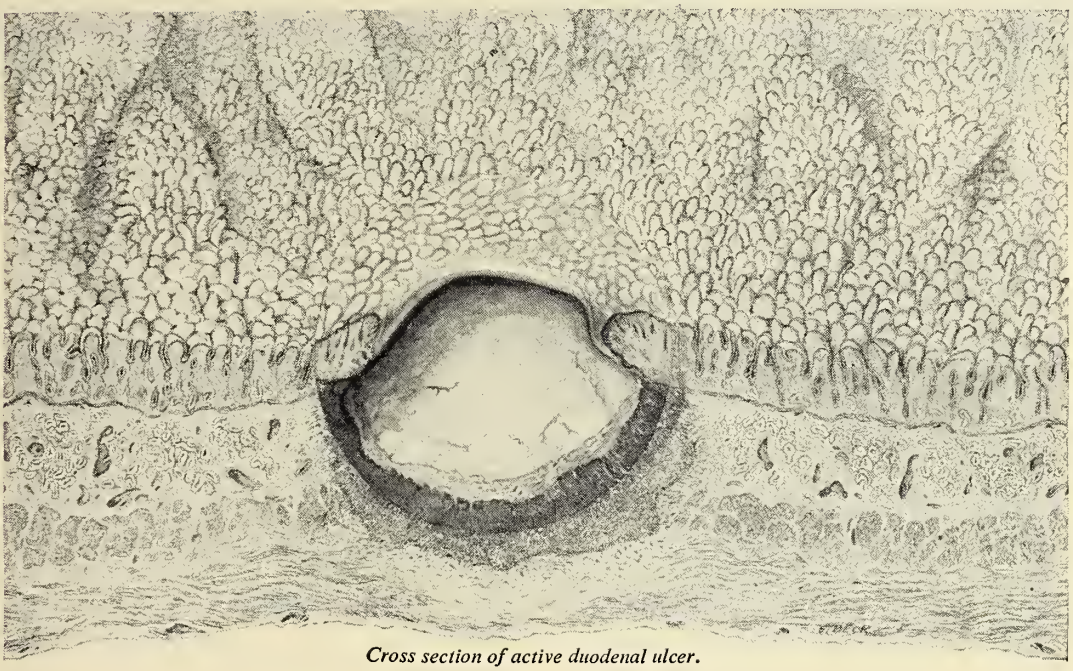
Hemorrhage into renal cyst with rupture and perirenal hematoma.

PATHOLOGICAL DISCUSSION

Dr. Colby: At the time of operation, the mass was exposed through an incision in the left side and was found to be retroperitoneal. It was about as large as a grapefruit. The whole mass was movable and we thought we were dealing with a retroperitoneal malignant tumor possibly a fibrosarcoma or a tumor of that order. However, on further dissection, the mass was freed from the large bowel and from the surrounding structures without too much difficulty. We were unable to find the kidney until almost at the end of the procedure, when it was then obvious that the mass did involve the kidney itself. The renal pedicle was clamped and the mass removed.

Dr. Castleman: In the operating room this was cut across; here in this photograph on the left is the kidney and on the right is a massive hematoma involving, as Dr. Smith predicted, Gerota's fascia. The source of this hemorrhage was apparently a small cyst in the cortex of the kidney in which there was both old and fresh blood. The capsule was elevated and there was fresh blood between it and the inner wall. A small perforation of the capusule into the surrounding fascia had produced the massive hematoma. We were unable to find any large artery, but so often in these cysts one finds only a small vessel that is close to the inner lining of the cyst. Another cause that one always has to think of with hemorrhage around a kidney is polyarteritis nodosa. We have seen that once or twice — a rupture of an aneurysm of an artery involved with polyarteritis producing a hematoma such as this. There was no evidence of that in any of the vessels that we examined. The patient made an uncomplicated recovery.

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2. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: A Clinical Evaluation of a New Anticholinergic Drug, Pro-Banthine, Gastroenterology *25*:416 (Nov.) 1953.

SEARLE

THE *President's* PAGE

Address of Harry E. Thompson, President Arizona Medical Association

Dr. Thoeny, Ladies and Gentlemen:

IT IS WITH the greatest appreciation, I accept the honor of becoming President of the Arizona Medical Association. This honor I would like to share with my distinguished colleagues who have made this opportunity possible, and who have spent so many hours and have devoted so much of their time to the Association. Dr. Thoeny has indicated that approximately 20% of the membership is serving in some capacity, and it appears the only way a man can be gotten rid of, or retired, is by election to Presidency. I say this seriously because our Society with its extensive ramifications, is made up largely of, moderately young, busy doctors. It seems that busy men can accomplish a great deal; therefore, as rapidly as possible, these men should be advanced in the affairs of the Association. Before going on to the message, or thought that I wish to leave with you, it is customary for the President to outline briefly the goals for 1955 and 1956.

First, I am delighted to say that it is not necessary for the doctors to put their "shoulders to the wheel." Their shoulders are to the wheel! In no other State Association is one able to find the willingness, the desire to serve, and the Espirit de Corps that we have here in Arizona.

Secondly, our baby State, Arizona, is unusually blessed with fine doctors. There are more good specialists in the metropolitan areas. There are more really fine General Practitioners there and outside of the larger cities, than in any comparable state. I strongly recommend the continuance of Seminars, Specialty, General Practice Groups, and meetings of these types to further our knowledge in medicine.

Third, the Women's Auxiliary should be given additional support. You know, for sometime, I thought the word Auxiliary meant a supernumerary organization, or meant something like an auxiliary motor; but, it does not. It means a help, or helpful organization. I strongly urge you to look on this organization as one which will be extremely valuable to the doctors.

Fourth, vigorous programs relating to the public information, good will, and press relations should be continued.

Fifth, the public health service should be given definitive help.

Sixth, and finally, I would like to discuss in some detail the topic which I have termed — We Have Weeded Our Garden.

It was during the Roosevelt administration, as you remember, when strong trends were developed toward socialized medicine. These were continued through Truman's Presidency. Certain, strongly voiced criticisms were made by the bureaucrats. As you know, many of these were constructive in character. Organized medicine took immediate steps to correct these failings. More schools, more nurses, better medical care to remote areas, etc. In addition, medicine promised to clean up its own back yard. Grievance and similar committees were organized and put in operation. Our members were quoted widely in press releases about ghost surgery, fee splitting, blood banks and other glaring defects. Undoubtedly some of these frank criticisms were well founded, but most unfortunately, two conditions resulted:

1. The public began to eye with suspicion doctors in general, but with reservation towards their own personal physician, and I quote roughly from a nationally syndicated columnist; "My doctor is fine and upright, but there are doctors who run a racquet."

2. The doctors themselves also eyed their colleagues with similar unspoken thoughts. Both of these conditions have shaken the faith of both the public and doctors, and we are now faced with a tremendous rebuilding job in re-

storing the confidence of the American people in all doctors. How can this be done? This question may be answered by statement of fact — We have weeded our garden. Organized medicine has cleaned up its own back yard. The mechanism of dealing with the transgressor is sure, swift, and just. No further shouting from the house tops is necessary, but a program of faith building is most timely.

Strangely enough, the job falls on the doctors and no amount of dissemination of medical knowledge by means of press, radio nor television will solve it. No doctor endorsed insurance plan, nor committees of grievance or finance can help. To build good will, it must start with the individual doctor himself. It is most unfortunate that as a result of weeding our garden, we have come to view with suspicion, even though it may not be voiced, the charges, the care, the practice of medicine of our colleagues. I would remind you, they, like you, have dedicated their lives to the care of their fellow man; they, like you, have spent many sleepless nights worrying about certain patients with special problems. They, like you, have been called out of bed, dead tired, frequently for a charity call, an operation, or a delivery. They are fine doctors devoted to their practice. If you doubt it, ask their patients, or their wives.

This recognition of the qualities of your fellow physicians, must be voiced to the people, to other doctor's patients, and to other doctors. I have been surprised at my own experience. This past year when a doctor's name was mentioned to me, I gave the doctor the strongest build up possible. It was gratifying to find that good news travelled almost as fast as bad. I recommend this to you as one method of restoring good will.

There are other means at our disposal showing the true character of a doctor. Since approximately 65% of all malpractice suits begin in other doctor's offices, it is necessary that each case be carefully evaluated, that the true facts be obtained, and if indicated, from the previous doctor. No word should be said that might be misinterpreted by the patient, or an over zealous barrister. Ask yourself the question, "What would I have done if I had been in that doctor's shoes?" One of my colleagues who handles these difficult situations well, talks frankly with the patient, and if he feels that the patient is "suit-minded", and the case has been handled to the best ability of the doctor, he says so. Most of these potential suits may be stopped in this way. Similar frankness and advice are also given to the lawyer of the case if it has been advanced that far. The formation of a medical-legal panel has been successful in ironing out many details.

Still another means at our disposal of creating good will is through radio, publications and television. It is my feeling that while the excellent television presentations by our society, has expanded public knowledge and has made the viewer somewhat qualified as an expert so that he now can discuss purse string closures in appendectomies, versus other methods, it has failed miserably in creating the good will that we desire. Jean Hersholt, typifing the family doctor, heard and loved by millions, is a good example of the doctor as he really is, and that type of program appears desirable.

I could not help but think after seeing one of our nationally televised programs, that had the story begun, which it did not, with a young couple very much in love, dealing with their struggles, the discovery that the husband had a brain tumor, and the visit with the kindly distinguished brain surgeon, that a great human interest story would have been created. How much better it would have been without the involved non-personal and somewhat frightening showing of Encephlograms, and the turning of a bone flap at surgery. A glance perhaps would have been sufficient. How nice to have finally returned her husband to her well and strong. This type of real drama is being reinacted many, many times daily in yours and other doctor's offices throughout the world. It has a tremendous appeal, because it is moving, heart warming, and brings out the true stature of the doctor.

Finally, and in conclusion, I sincerely believe that from the doctors of this state, can come the fission producing reaction that will mushroom over the other states. Let the American people know that we have weeded our garden! Let us be the first to again restore confidence in their doctors so that they may say:

> They are honest, kindly men dedicated to their practice, and to the healing of the sick. Take care of them, Oh Lord, because they are our physicians.

Editorial

ARIZONA MEDICINE
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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

A STEP IN THE RIGHT DIRECTION

AT the recent meeting in Tucson it was decided to broaden the coverage of Blue Shield to include certain non-surgical illnesses in the hospital.

This is a step in the right direction!

A serious complaint against Blue Shield — by doctors as well as policyholders — has been narrow coverage. Some doctors are forced to spend considerable time explaining to policyholders that they are not covered for this or that. These doctors become a bit irked — and not without reason — at having to spend this time for such a purpose. It makes no difference whose fault it is that the policyholder does not understand the policy and what it covers. The fact remains that the doctor who gets least from Blue Shield loses most because of it.

Broader coverage is the answer.

Now, everyone knows that the entire project must be on a sound acturial basis. Everyone realizes that the increased costs of additional coverage must be met. The added insurance must be paid for. Obviously, we are dealing with a problem that cannot be solved overnight. Among other things that will have to be done will be the matter of selling the policyholders on the idea of paying a higher premium for the broader coverage.

It will all take time. In the meantime, the members of the profession will continue to cooperate — some of them who receive little or no direct benefit from the plan. And it is hoped that, periodically, there may be taken another STEP IN THE RIGHT DIRECTION.



HARRY E. THOMPSON
President
Arizona Medical Association, Inc.

TOPICS OF Current Medical INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

A Tucson surgeon long ago let it be known that he wanted nothing to do with three conditions beginning with 'A' — ASTHMA, ALCOHOLISM, and ARTHRITIS. . . . This could be callous, and not strictly according to Hippocrates, but another good man (with a good name) once said, "When I see an ARTHRITIC entering the front door, I leave by the back door". . . . Arthritis is still a hard nut to crack. It impoverishes the patient and doesn't enrich the doctor. 'Medical Economics' says that federal funds are scanty for research, and medical schools average only 4 hours teaching in 4 years on the subject. . . . Who were the reluctant M.D.'s mentioned above? The Tucsonian is unnamed, but the back door escapist was Sir William Osler.

Phoenix has been given two pages in 'THE MODERN HOSPITAL' for April by way of the York Corporation advertising, and pictures of the Park Central Medical and St. Joseph's Hospital buildings. . . . They both have York Turbo Water Cooling Systems. The aerial views of the two structures are pretty impressvie.

TRIGEMINAL NEURALGIA isn't seen very often, but the total of its cases should decrease if work by Johns Hopkins and VA men named Smith and Miller can be confirmed. . . . They gave daily oral STILBAMIDINE for 2 weeks in 40 cases. There were no recurrences in periods up to thirty months.

Pleural effusions still cause a lot of furrowed brows. A Mayo Clinic series of 444 cases in 1945 contained 170 without a primary cause, and things aren't much better now, says Dr. Oz Coates of Detroit. . . . A Trudeau San series described by Dr. Roger Mitchell showed that 24% developed TB. Drs. Roper and Waring followed 141 young effusion patients from the military service and found TB within 5 years in 65 per cent. . . . The Mayo report (Tinney and Olsen) on older people found that two-thirds of 300 cases with known cause had a malignancy.

It was only 15 years ago that the medical and surgical salvage of 50 per cent of the cases of LUNG ABSCESS was an average figure. . . . Now a paper by Shoemaker, Byrd, and Dow can state that almost all pulmonary abscesses can be managed medically. Their 'cure rate' with penicillin since 1950 has been 90 per cent, including the chronic lesions, and they believe that it can be higher with the increasing number of antibiotics.

About eight or nine years ago ARIZONA MEDICINE contained an article (the second in the literature) which reported a good effect on 60 cases of chronic purulent BRONCHIAL INFECTIONS from use of 'SULFA' drugs (The late Dr. John Stacey had previously mentioned five cases) . . . It has been widely UNquoted in the years since, but the J.A.M.A. now lends the approval of an editorial to ANTIBIOTICS IN BRONCHIECTASIS. . . . Prophylactic therapy may be continuous or intermittent. It may include one or more drugs, together or alternately. Penicillin by mouth may be best, due to the predominance of gram-positive bacteria. Sulfa drugs can be used as a substitute. . . . Gram negative bacilli, or failure of penicillin, indicates need for a broad spectrum drug (tho they are said to be more troublesome). . . . Acute episodes may need more vigorous treatment, and sensitivity tests for best effect.

Chronic disseminated NEURODERMATITIS, a fairly obscure condition, is made no clearer by Fiske and Obermayer in the Arch. of Derm. & Syph. . . . They say that for certain neurotic subjects "the skin constitutes an uncertain barrier between self and baneful environmental forces". These people are preoccupied with their skin, which is eroticized, and with such traits as guilt, hostile-dependent relationships, and other things which won't be included in this family-type journal.

The fantastic history of ANAESTHETICS AND ANAESTHETISTS (which were terms introduced by Oliver Wendell Holmes) is worth more than a passing mention. . . . One should recall the $100,000 award offered by the U.S. Congress, but was never paid because of a bitter controversy. . . . Horace Wells, a Connecticut dentist, used nitrous oxide successfully; a public trial at the Mass. General Hospital failed, he withdrew from practice, became insane, and committed suicide at 33. . . . William Morton of Massachusetts gave ether at the same hospital, but patented it as 'Letheon', was discredited, couldn't finish his medical studies, and died of apoplexy. . . . Charles Jackson had used ether and discussed it with Morton; he later went insane. . . . Simpson and chlor-

oform in England had a better fate, with recognition from Queen Victoria, but the only American pioneer to avoid tragedy was Crawford Long down in Georgia, and he refused to enter the 'ether controversy', tho he probably was first to use it.

When Guillermo was a child in New York City, his parents had to VACCINATE him against small-pox, do it without protest, and protect him from the kids who would swat his left arm. So they got him up at night, vaccinated him on the right arm, told him nothing, and made him wear an undershirt for a few days to hide the marks. . . . Now, in London, Pick reports that streptomycin can be given to children without distress and tears by doing the injections AN HOUR AFTER THEY HAVE FALLEN ASLEEP. . . . We could have become a famous case-report, and saved science about 20 (or 40) years.

VIRUSES in the inflamed respiratory tract can be isolated, and can be identified. Huebner of Washington, D.C., isolated 143 strains from people with respiratory illnesses, and they could be classified as members of types. . . . When patients insist that they have had 'virus infection', or 'virus flu', or 'virus pneumonia', they may be correct . . . those sometimes they have a specific bacterial infection, or TB.

Speaking of viruses, as Dr. R. E. H. Simpson also has done in England, there is news concerning HERPES AND CHICKENPOX. In a large, severe herpes the patient may develop generalized skin lesions which are very similar to the chickenpox. . . . Now it is said that the same pathogen causes each, and that complete cross-immunity exists. It may mean something in the way of control and therapy some day.

MIGRAINE is a tough problem. . . . Likewise during anything in a hundred per cent of the cases is real good. . . . When a person cures 100% of his migraines it is a super miracle with a few bop terms added. . . . Vaisberg of Miami Beach says that Dramamine (IM or IV) will clear migraine, no matter how severe or prolonged. . . . Doses of 50 to 100 mg. IV ended nausea and pain in 4 minutes, while the IM route takes longer — 15 minutes. . . . This might be worth a try, and without prejudice even if from Florida.

Mrs. Osler saw a child of 7 years SUCKING HIS THUMB the other day, worried about it for 24 hours, thought of its many psychologic implications, and finally mentioned it. . . . It should have been possible to assure the lady that a child who sucks his thumb (or a pacifier) is in a bad snarl — anxiety, ungratified need for oral satisfaction, very rare, etc. . . . It's not so simple, tho. Here is an abstract from 'GP' mag., a journal of the burgeoning Amer. Acad. of Gen'l. Practice 42% of thumb-suckers continue past the age of two; 21% beyond the age of six. Dr. Rittelmeyer of Tennessee says that PACIFIERS are approved (repeat, 'approved') by many prominent specialists. They not only don't cause colic, they are used as a treatment for it. They are not so very dirty; thumbs are ten times dirtier. . . . Pacifiers can be discarded any time after the second birthday without development of thumb-sucking.

The magic numbers in SEX STEROID REPLACEMENT THERAPY are 20 to 1. Several articles, including one by Masters and Ballew, say that for men AND women over 60 years of age it is the almost perfect ratio. The effects are obtained from 20 mg. of testosterone propionate to 1 mg. of estradiol benzoate. . . . Woman have little or no breast trouble and no vaginal bleeding. Men have no breast trouble and no protein wastage. You can't hardly overtreat people no more. . . Senile people are often reclaimed from senility in a dramatic fashion.

It would puzzle many physicians to know why we should honor the 820th anniversary of the birth of MOSES MAIMONIDES. Any admirer of versatility would consider it shameful to overlook him, tho. . . . He was a Jew, first educated in Cordova, and then by his father while the family was chivvied across the southern Mediterranean countries to Cairo. . . . At 23 years he had published works on theology and astronomy, and soon had become educated in Hebrew, Arabic, Greek, mathematics, and philosophy. He admired Aristotle, and wrote a liberal theme called 'Guide to the Perplexed', which was first condemned by Christians and Jews and then used as a model by Thomas Aquinas. . . . Financial responsibilities forced him to practice, and he soon was physician to the Sultan as well as to the 'prominent and common' people. He wrote on theology, philosophy, astronomy, poisons and their antidotes, asthma, the aphorisms of Galen, personal hygiene, a tract on hemorrhoids, the use of drugs, and about various kinds of food and diets. . . . 'A Prayer of Maimonides' is a beautiful medical-Christian document which is more famous than his name. . . . His most pleasant memorial is that of his people, who appreciated him, saying on his tomb — "From Moses to Moses there was none like unto Moses".

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HBA FOR SECURITY

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by Hospital Benefit Assurance, First Street at Willetta, Phoenix June, 1955

Question Quiz
Do you know the answers?

Q. What kinds of insurance are issued by HBA?

A. As a Legal Reserve Life Insurance Company, HBA issues policies on life, accident and sickness disability income, and the familiar hospital and surgical policies.

Q. Does HBA offer disability income policies for Doctors?

A. Yes, HBA Non-Cancellable Security Income Protection ($200 per month for 24 months) is especially attractive to professional men because in addition to monthly indemnity, accidental death benefits up to $50,000 are also available.

Q. What restrictions and exclusions are there on HBA Security Income Protection Policies?

A. Other than suicide, war (military service), piloting aircraft, there are NO EXCLUSIONS on illness or accidents within the United States, territories, and Canada.

Q. Is HBA Security Income Protection NON-CANCELLABLE?

A. Yes, ALL HBA policies are NON-CANCELLABLE.

Q. Is HBA Security Income Protection a low cost policy?

A. Only in the sense that the best is usually the least expensive in the long run. We do, however, offer certain advantages not found in some of the other deluxe disability insurance plans.

Q. How can I find out about HBA Security Income Protection for myself?

A. Phone AL 8-4888 in Phoenix, 3-9421 in Tucson.

ANESTHETISTS' FEES PAID BY HBA...WHEN BILLED

The Hospital Benefit Assurance Surgical Schedule provides for payment of a fee to the Anesthetist in a case covered by the HBA Surgical Benefits.

The HBA Schedule for Anesthetists provides:

Ether, for one hour or less	$15.00
For each additional 15 minutes	2.50
Gas, for one hour or less	15.00
For each additional 15 minutes	3.00
Intravenous, for one hour or less	15.00
For each additional 15 minutes	3.00
Spinal and rectal — same as for intravenous.	
Any general anesthetic for minor operations, 15 minutes or less	5.00

Local anesthetic to be considered part of the operative fee.

To facilitate payment of fees for services rendered HBA patients, the anesthetist should send statements direct to HBA, because HBA benefits are payable direct to the doctor without assignment and in 97 per cent of the cases without any forms at all.

Anesthetist's statement should include the length of time services were required because the HBA schedule for anesthetists' fees is based on time.

The billing form used by the operating physician also includes the time consumed by the operation, and the anesthetist's time figure should agree.

HBA office procedure is such that all bills on a case are accumulated and paid at the same time. Hospital bills are normally received promptly, but if either the surgeon or the anesthetist hold up sending statements there is a delay in making payments and closing the file.

Anesthetists who determine if the patient is an HBA Member, and who send statements direct to HBA promptly after services have been rendered, and include an indication of the TIME spent during the operation will receive HBA Benefit Checks promptly for the amount to be paid by Hospital Benefit Assurance.

For quick reference, this article should be clipped out and discussed with whoever makes out the statements.

UNBELIEVABLE

You can buy an HBA single premium life insurance policy today — and next month — next year — ten years from now you can get all your money back, with interest after the first year — and will have had life insurance protection at no cost!



"Sure, I remember you . . . Gallbladder 1949—HBA paid."

Notes from the EDITORS PEN

GENERAL PRACTITIONERS

The recent Los Angeles convention of the American Academy of General Practice broke all attendance records. Over-all registration totaled 6,081. There were 3,337 physicians; 935 technical exhibitors; 121 scientific exhibitors, and 1,648 ladies and guests. This compared with a previous high of 2,853 physicians at the Cleveland meeting in 1954.

The congress of delegates, the policy-making body which is made up of representatives of the academy's 52 chapters, considered 35 resolutions. One of the major resolutions called for increased standards of membership. Hereafter, a candidate for membership must have fulfilled one of the following three requirements:

1. Two years of graduate training acceptable to and aproved by the academy's commission on education;
2. One year of graduate training acceptable to and approved by the commission, followed by two years of general practice; or:
3. Three years of general practice.

WHITAKER & BAXTER

Clem Whitaker and Leone Baxter, who directed the A.M.A. National Education Campaign, received top-ranking appointments recently in connection with the 1956 Republican National Convention which will be held in San Francisco in August.

SOVIET MEDICAL PROPAGANDA GOES TO PHYSICIANS

Information reaching the American Medical Association indicates that numerous physicians throughout the country recently have received a mimeographed publication called "American Soviet Facts", containing 21 half-pages of "up-to-date information" on "Health and Medical Care in the U.S.S.R." This material is published by the National Council of American Soviet Friendship, 114 East 32nd Street, New York 16, New York, one of the leading communist propaganda agencies in the United States.

As a safeguard against any suspicions of communist sympathies, physicians who wish to keep the record straight should write to the National Council of American-Soviet Friendship, requesting that their names be taken off that organization's mailing list. A carbon copy of the letter should be sent to the nearest office of the Federal Bureau of Investigation or the FBI in Washington, along with the propaganda material received. This precaution is advised because records are kept of persons receiving communist literature for any considerable length of time.

THE FOREIGN GRADUATE PROBLEM

With the new immigration quota in the next two years some 11,000 medical graduates of foreign schools will enter the United States for permanent residence as well as post-graduate education. Statistics show that practically 99% of those entering our country are desirous of remaining here. Experience with past quotas of these foreign graduates and displaced medical men has revealed that their education is markedly inferior to our class "A" medical school graduates and that only a small per cent are able to pass various state board examinations. It thus leads to much confusion and results in efforts of pressure groups of various types of influence the examining boards to permit foreign graduates to practice in this country.

State examining boards have a certain standard of minimum education which they require for licensure. Lowering these standards would definitely show regression and interfere with the progress we have made in this country. It is to be noted that education is the paramount problem and no one who has had the proper standard of education would have much difficulty with the examinations. Medical education since the war in foreign countries has been very inferior as compared to our standards.

DOCTORS IN UNIFORM

The government's own Health Resources Advisory Committee reports there are about three times as many physicians in the armed forces as are needed to provide essential medical care. These physicians, say the report, spend only 10 to 12% of their time in caring for dependants of servicemen. When the government says two-thirds of the physicians in unform are not really needed, the AMA opinion that much of the shortage of medical personnel is artificial seems to be well substantiated.

HOOVER COMMISSION MEDICAL REPORT

Some interesting statistics appearing in the Hoover Commission's report on Federal medical services:

It is estimated the federal government "has undertaken specific responsibility for all or part of the medical care of about 30 million" citizens: 4 million (most servicemen) entitled to complete care and 3.5 million veterans entitled to complete care for S.C. disabilities; over 20 million eligible on a facilities-available basis, including 2.9 million dependents of military personnel and 17.5 million veterans eligible for hospitalization on their statement of inability to pay; and 2.5 million Federal employees eligible for limited on-the-job health services.

The Federal government employs about 10% of all active physicians, 9% of all active dentists and 6% of the active graduate nurses.

In 1953, Federal hospitals had about 1/6 of the nation's GM & S beds, 1/12 of the mental hospital beds and over 1/9 of the TB beds; of 19.9 million admissions to hospitals that year, 1.5 million (over 7.5%) were to Federal hospitals.

It is further reported that there are sufficient empty beds in Navy hospitals to care for all Air Force patients and sufficient empty Army beds to care for all patients of both the other services.

WARDS OF THE FEDERAL GOVERNMENT

The plight of the American Indian is a sorry state. It is reported that of more than 400,000 on tribal rolls, 61,000 cannot speak English and 59,000 cannot read or write; among the 65,000 Navajos, there is an average of less than one year's schooling; in the Navajo-Hopi area of New Mexico and Utah, the infant death rate is 139.4 per thousand, compared to 33.2 for non-indians in the same area; X-rays show 20 active active TB cases per thousand Indians, compared to the general population average of 1 to 3 per thousand.

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ARIZONA *Pharmaceutical* PAGE

RETROSPECT

By Joseph A. Zapotocky, Ph.D.
College of Pharmacy, University of Arizona

WITH MASS polio inoculations of primary interest both to the public and to the members of the health professions, many of us can appreciate the uncertainties and misgivings which accompanied previous inoculation programs in our history. And, once again, we should have profited by our previous experiences in this field.

The public looks to members of the health professions for assurance and guidance in any new health program. Their whole-hearted acceptance of such a program is based on our acceptance and belief in the program. A program that is endorsed one day and questioned the next cannot be expected to receive public support. Indecision causes fear, superstition and uncertainty.

If we look back to the turn of the century and examine the conditions existent during the smallpox vaccination program, we find interesting similarities in the conditions of our present day polio vaccination program. There were many physicians and health officials who opposed vaccination. Their viewpoint was supported by the incidence of smallpox in those who supposedly had been vaccinated. Unsuccessful vaccinations were often blamed upon the use of inferior or inactive vaccines produced by manufacturers and pharmacists. Periodically, demands were made to recall batches of the vaccine from the market. Claims were made that not all of the manufacturers were preparing a standard product and that uniform results could not be achieved with these varied products. The cases of tetanus which, on occasion, arose after vaccination were supposedly due to the septic technique used by the manufacturers in the production of the vaccine. The manufacturers, in turn, attributed the miscellaneous infections following vaccination to the faulty techniques used by physicians and the superstitious practices of some people.

The lack of intra-professional harmony among physicians did much to undermine public acceptance of the practice of vaccination. Some physicians were accused of false vaccinations made by scarification alone; others were accused of an inability to distinguish between successful and unsuccessful vaccinations. Physicians differed in their opinion regarding the number of vaccinations needed to produce immunity, and some contended that at least four successive vaccinations were necessary to confer immunity.

Government control of the production, testing and distribution of the vaccine was demanded by some of the public. Others even advocated the training of public vaccinators.

The modern refrigerator for the storage of biologicals was still in the offing and retail pharmacists came in for their share of censure. They became a convenient target for the accusations of selling old or deteriorated vaccine.

In these days of indecision on the merits of the polio vaccine, we may again receive our share of criticism. It is hoped that we can avoid this by strict adherence to the recommended procedures for the use, handling, and storage of the vaccine. We can expedite the tracing of certain lots of vaccine by keeping a record of each lot of vaccine that we handle and know specifically to whom each dose was issued. Such data will also be of value if a re-evaluation of the vaccine is needed. We must help avoid sensationalism, hysteria, rash statements, unfounded rumors, and inter-professional accusations which have occurred with previous inoculation programs.

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WHEN WRITING ADVERTISERS PLEASE MENTION THIS JOURNAL

Organization PAGE

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

MUSCULAR DYSTROPHY ASSOCIATION OF AMERICA, Pima County Chapter (Southern Arizona), 743 North Stone Avenue, Tucson, Arizona.

The following is a quotation in part from the Pima County Chapter's letter to this page:

"I will summarize the phases of work that the PROGRAMS are entertaining;

(1) PATIENT'S SERVICE:
A—Patient Census
B—Clinical Aid
C—Equipment
D—Therapy
E—Transportation
F—Visitation
G—Craft projects & Social Service

(2) PUBLICITY:
A—TV Medium
B—Radio Appeals
C—Newspaper
D—Photographs
E—Social Clubs
F—Service Clubs, etc.

(3) PROGRAM:
A—Set up the Agenda for Meetings
B—Time and Place of Meeting
C—Solicit Speakers
D—Arrange for New Program Interests

(4) PLANNING COMMITTEE:
A—To promote ideas and pass them on to the committee for projection, coordination and cooperation.
B—Assist in Special Events
C—To exchange ideas with all committees, with the *one important factor in mind "That all of us are here to serve those patients who are Afflicted with MUSCULAR DYSTROPHY.*

(5) CAMPAIGN COMMITTEE: (Fund Raising)
A—Self-explanatory
(a) A dirty job, a hard job, and a very IMPORTANT JOB!
(i.e.) And the Job, that gives all of us the PRIVILEGE to SERVE our fellow man."

"(***A very important factor to be stressed as we, under the National policy are turning over 75% of all funds collected in our local future campaigns to be directed to RESEARCH)."

On this page in last September's issue, we reported on the national program of this organization and announced the forming of the Maricopa County Chapter. We noted the phenomenal growth of the Muscular Dystrophy Association nationally, advising that this agency in its four years had contributed nearly one million dollars to research.

How do you explain such results with a program in which 75 per cent of all funds collected are earmarked locally and returned to the national organization for purposes of research?

In the formation of both the Maricopa and Pima County Chapters we find a need was recognized at the local level and the development of the local chapters was the product of the people of those areas.

In all our communications from these locals we find the name of only one man — from a central organization. We were advised that we, like they, could address our requests for information as regards the national program — to his attention.

Is independent community programming with a minimum of central direct the key to the Muscular Dystrophy Association of America's phenomenal popularity and growth?

* * *

NATIONAL FUND FOR MEDICAL EDUCATION, 2 West 46th Street, New York 36, New York, Chase Mellen Jr., Executive Vice President.

The booklet, "Industry's Stake in Medical Education" may be obtained without charge by addressing the above organization. It is our feeling that the preface to this booklet which is entitled "Partners for Health" should stimulate the interest of the medical profession in our rapidly growing state.

I quote: "The nation's rapid industrialization

and urbanization is greatly intensifying our health problems. But at the same time new opportunities are constantly presented for the promotion of personal and community health."

We would suggest ordering this booklet. Give your home address if in your family there is a high school or college student. They, too, will appreciate it.

* * *

ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC., 207 Arizona Title Building, Phoenix, Arizona (Easter Seal Society).

A concentrated summer program of education and therapy for handicapped youngsters of Arizona was announced this week by the Arizona Society for Crippled Children and Adults, The Easter Seal Society.

A five-week clinic for the cerebral palsied is to be held at Prescott July 25 through August 26. Objectives of the clinic, according to Robert Nochta, clinic director and physical therapist for the Society, are to provide a concentrated direct therapy course for the cerebral palsied child and group parental education directed towards home treatment and care of the cerebral palsied. The session will also provide opportunity for parents to work directly with their children while closely supervised by the staff.

A workshop in the education of exceptional children will be conducted at Flagstaff July 11, to August 12, in cooperation with Arizona State College at Flagstaff. The course, including a seminar and clinic for speech-handicapped children, is designed to equip the classroom teacher to meet the needs and the problems of the handicapped child who may be in the classroom. The speech clinic will provide opportunity for the classroom teacher to observe and actually work with children who have speech and hearing difficulties, in addition to providing therapy for the children.

The Prescott and Flagstaff programs are open

(Continued on Page 266)

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PREDNISONE
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more potent
than other corticosteroids
lessened incidence
of sodium retention
and potassium depletion
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METICORTEN,* brand of prednisone.

Interesting Topics

HAVE YOU READ?
? ? ?

THE Medical Research Council's (British) report of their Tuberculosis Chemotherapy Committee on VARIOUS COMBINATIONS OF ISONIAZID WITH STREPTOMYCIN OR WITH PAS IN THE TREATMENT OF PULMONARY TUBERCULOSIS"? It will be found as the lead article in British Medical Journal for Feb. 19, 1955.

? Article by T. Holmes Sellors, thoracic surgeon of London on RESULTS OF SURGICAL TREATMENT OF CARCINOMA OF THE LUNG"? It is based on 689 personal cases of thoracotomies operated on between 1940 and 1950. See British Medical Journal for Feb. 19, 1955.

? Report of RESULTS OF PARTIAL GASTRECTOMY IN TREATMENT OF PEPTIC ULCER by Anderson, Gunn and Watt, in British Medical Journal for Feb. 26, 1955? Based on 481 cases operated upon between 1940 and 1951.

? Special issue of Diseases of the Chest (April, 1955), with its series of articles on CARCINOMA OF THE LUNG? It has seven original articles and five case report articles, making an excellent review of this important subject.

? Series of articles on the GRAPHIC DIAGNOSIS OF CORONARY DISEASE in March, 1955, issue of Diseases of the Chest? Ten articles make up this symposium, including a very excellent one on fluoroscopy of the chest.

? Article on ALLERGY IN GENERAL PRACTICE, by J. P. Sanders, in The Journ. of the La. State Med. Soc., for April, 1955

? The two Medical Progress reviews on TUBERCULOSIS, by Donald S. King, in The New Eng. Journ. of Med., for Jan. 20 and 27, 1955? Excellent review of all phases of the subject of treatment.

? Article by Elmer C. Bartels, on MEDICAL TREATMENT OF THYROID DISEASE, in Medical Annals of the Dist. of Columbia, April, 1955? Discusses hyper-thyroidism, myxdema and thyroiditis, which he considers "common medical problems for which adequate therapeutic measures are available."

? The excellent article on PULMONARY SEGMENTAL RESECTION, by James D. Hardy of Memphis, in The Journ. of the Med. Assn. of Alabama, for April 1955? Nice pictures too.

? A very interesting and unusual article on THE MEDICAL ASPECTS OF HIGHWAY ACCIDENTS, by Marsh and Moore, of Omaha, in South Dakota Journ. of Medicine and Pharmacy, April, 1955.

? Article by Carl P. Huber, professor of gynecology at Univ. of Indiana School of Med., on TREATMENT OF CARCINOMA OF THE CERVIX UTERI? It is in the Journ. of the Indiana State Med. Assn., April, 1955. He considers radiation therapy as the primary treatment of choice in all stages.

? Article by Campbell and Durlacher, in Journ. of the Indiana State Med. Assn., April, 1955, on CLINICAL USEFULNESS OF RADIOACTIVE GOLD 198?

? Article on CHRONIC ULCERATIVE COLITIS: CURRENT THERAPEUTIC CONSIDERATIONS, in The Journ. of the Iowa State Med. Soc., March, 1955, by Joseph B. Kirsner of Chicago?

? ERRORS OF DIAGNOSIS IN PEDIATRICS, in British Med. Journ., Feb. 12, 1955, by Bernard Schlesinger, of London? He is British but maybe we make the same mistakes.

? A beautifully illustrated article on DISEASES OF THE ESOPHAGUS, by G. V. Brindley, Jr., of Temple, Texas? It is in Texas State Journal of Medicine for February, 1955.

? NEW ASPECTS OF OLD LIVER FUNCTION TESTS, by Smith and Gast, in Texas State Journ. of Med., February, 1955? A very excellent short summary.

? The article by Earle W. Wilkins, Jr., of Boston, in the New Eng. Journ. of Med., Mch. 31, 1955, on THE ASYMPTOMATIC ISOLATED PULMONARY NODULE? He advocates exploration in all such.

? The Medical Progress articles on COAGULATION, HEMORRHAGE AND THROMBOSIS, in the New Eng. Journ. of Med., for Mch. 24 and 31, 1955? Review by Benjamin Alexander of Boston.

? The article on IRRITABLE COLON SYNDROME, by Milton M. Lieberthal, in Conn. State Med. Journ., February, 1955? He says "by means of the treatment program outlined, it is possible to achieve a 76.7 per cent satisfactory result in cases of irritable colon syndrome with diarrhea" based on 179 cases.

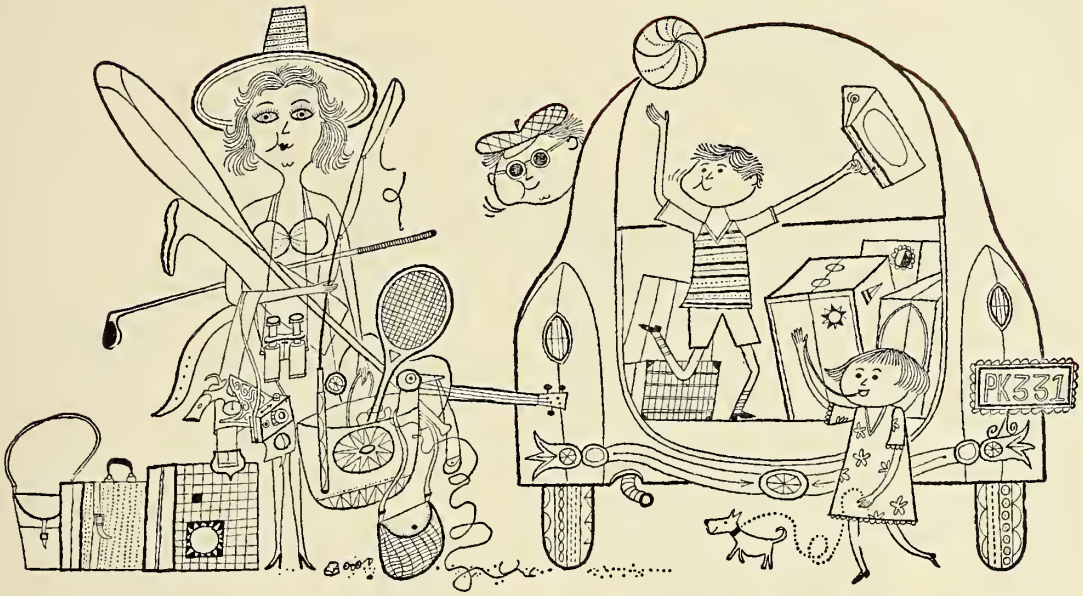
? ESTROGENS AND ACNE, by Irving Shapiro, in The Journ. of the Med. Soc. of N. J., January, 1955? Says sodium estrone lotion better than x-ray.

? UNORTHODOX CANCER REMEDIES by Gordon A. Granger, Washington, D.C., in Medical Annals of the Dist. of Col., February, 1955? Good informative article on some of these.

? RECENT ADVANCES IN RHEUMATIC DISEASES, in Calif. Medicine, February, 1955? A very excellent article by Edward W. Boland of Los Angeles, with over 100 references as basis of discussion.

? X-RAY, MALPRACTICE AND THE GARRULOUS PHYSICIAN, by Ervin Epstein of Oak land, in Calif. Med., Feb., 1955? A short, pithy criticism of the dangers of a doctor talking out of ignorance about x-ray dermatitis.

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(Continued from Page 263)

to children from all parts of the state. *Admission to the clinics is based on* the findings and recommendations of medical specialists who have been conducting *diagnostic clinics* in all counties during the 1954-55 school year. (Joint clinic sponsorship of the Easter Seal Society and the Arizona Department of Public Welfare, Crippled Children's Division).

Intensified speech and hearing correction course at Samuel Gompers Easter Seal Clinic, 7211 North 7th Street, Phoenix, will be conducted from June 6 through July 15. The program, in which approximately 150 *speech and hearing cases* are expected to enroll, is open to all persons who are in need of such therapy and *includes both children and adults.*

During the six-week period classes will be conducted Mondays through Fridays. Appointments for evaluation and admission to the summer session can be made by calling the Easter Seal Clinic, Phoenix, WIndsor 3-3484.

BOSTON CLINICAL MEETING AMERICAN MEDICAL ASSOCIATION

November 29-December 2, 1955

ALL PERSONS who desire a place on the lecture program at the Boston Clinical Meeting of the American Medical Association are urged to communicate immediately with the Chairman of the Program Committee Theodore L. Badger, M.D., c/o Massachusetts Medical Society, 22 The Fenway, Boston 15.

Applications for space in the Scientific Exhibit are now available and will be sent on request. Exhibits will supplement the lectures as far as possible, and should portray subjects of a broad general interest. Requests for applications should be sent to the Secretary, Council on Scientific Assembly, American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois.

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Woman's AUXILIARY



Left to Right: Mrs. George Turner, El Paso, Texas, National Auxiliary President; Mrs. Roy Hewitt, Tucson, newly elected President of the State Medical Auxiliary; Mrs. Brick Storts, Tucson out-going President of the State Auxiliary; and Mrs. Oscar Thoeny, Phoenix, Auxiliary President-Elect.

CONVENTION REPORT

THE twenty-fifth annual convention of the Woman's Auxiliary to the Arizona Medical Association met in Tucson, May 5, 6, and 7th, 1955. This Silver Anniversary Meeting had the highest registration in the history of the Auxiliary with 152 members attending. We were especially honored to have as our guest and main speaker, Mrs. George Turner, President of the National Woman's Auxiliary.

Thursday morning saw the beginning of the committee meetings with the members of the Nominating and Nurse Loan Fund Committees convening. Mrs. Storts entertained 27 board members with a luncheon at the Tucson Country Club which was followed immediately by the pre-convention board meeting. At the conclusion of this, Mrs. John Kloby, program chairman, conducted a school of instruction for all new officers and committee chairmen.

The activities on Friday were opened with a luncheon held at the Turf Room and attended by 113 members. The "straw hat" decorations were beautifully done and set the pace for a lively and absorbing meeting. The first general session was called to order by Mrs. Brick Storts, State President. Mrs. Turner spoke to us on "LEADERSHIP IN COMMUNITY HEALTH," which has been our program theme for this year. She pointed out all of the things we could and should do as physicians' wives in accepting our role as leaders in matters dealing with the health of the people in the community. Reports of the officers and the board were read which showed the splendid work done by these state officers during the past year. All of the auxiliaries are continuing the wonderful work they have been doing in nurse recruitment, future nurses clubs and radio programs.

The newly elected county presidents met with Mrs. Turner on Friday evening for a very in-

formative discussion on problems on a county level.

The brunch on Saturday morning was attended by 114 women and a style show with fashions by Dorothy Rice was especially enjoyed. Mrs. W. R. Manning was in charge of this with six Pima County auxiliary members acting as the models.

The headtable centerpiece which was made of pills fashioned in the shape of flowers and the pill corsage presented to Mrs. Turner, were the handiwork of the Yavapai Auxiliary members from Prescott. These flowers are truly beautiful and an unusual work of art and are to be taken to the National meeting in Atlantic City in June by Mrs. Hewitt, our newly elected State President.

The second general session was highlighted by the reports of the County Presidents. Each Auxiliary has done an outstanding job this year and is to be complimented on their achievements.

Mrs. Turner spoke to us briefly on her trip to Europe which she made this year. She was one of eleven women who was chosen as a representative of their organization to go to Europe on behalf of the "CRUSADE FOR FREEDOM" program.

Mrs. Turner installed the new officers who had been elected the previous day. They were:

President—Mrs. Roy Hewitt
President Elect—Mrs. Oscar Thoeny
First Vice Pres.—Mrs. Charles Powell
Second Vice-Pres.—Mrs. Donald Nelson
Treasurer—Mrs. C. L. Von Pohle
Recording Sec.—Mrs. Melvin Phillips

After a brief inaugural address by Mrs. Hewitt the meeting was declared adjourned.

That evening the cocktail party in the patio of the El Conquistador Hotel followed by the dinner dance was a wonderful ending to an enjoyable and informative three day meeting.

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MEAD JOHNSON AWARDS FOR GRADUATE TRAINING

Notice has just been received of the Mead Johnson awards for graduate training. These scholarship awards are made available to promising young residents and internes in a number of the larger fields of medicine to help insure continuance of their training. As a service to young physicians who may be interested we list the awards and the sources of information concerning them below:

AWARDS

General Practice — Mead Johnson Awards for Graduate Training in General Practice are available from the American Academy of General Practice.

For information, write: Mr. Charles E. Nyberg, Executive Assistant American Academy of General Practice, Broadway at 34th Street, Kansas City 11, Missouri.

Internal Medicine — Mead Johnson Awards for Graduate Training in Internal Medicine are available from the American College of Physicians.

For information, write: Mr. E. R. Loveland, Executive Secretary American College of Physicians, 4200 Pine Street, Philadelphia 4, Penn.

Obstetrics and Gynecology — Mead Johnson Awards for Graduate Training in Obstetrics and Gynecology are available from the American Academy of Obstetrics and Gynecology.

For information, write: Mr. Donald F. Richardson, Executive Secretary American Academy of Obstetrics and Gynecology, 116 South Michigan Avenue, Chicago 3, Illinois.

Pediatrics — American Academy of Pediatrics Residency Fellowships in Pediatrics are available from the American Academy of Pediatrics.

For more information, write: E. H. Christopherson, M.D., Executive Secretary American Academy of Pediatrics, 610 Church Street, Evanston, Illinois.

Surgery — Mead Johnson Awards for Graduate Training in Surgery are available from the American College of Surgeons.

For information, write: George W. Stephenson, M.D., Assistant Director American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

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Book REVIEWS

REVIEW OF MEDICAL MICROBIOLOGY – By Ernest Jawetz, Ph. D., M.D., & Joseph L. Melnick, Ph. D., & Edward A. Adelberg, Ph. D. Published by Lange Medical Publications – Post Office Box 1215, Los Altos, California. 1954. Price $4.50.

THIS is a very comprehensive and up-to-date text. There are 354 pages of fairly fine print with a comprehensive and easily used index. The text material is set off in outline form which is very excellent for reference work. It is very easy to quickly inform oneself on the high spots of the life history, morphology, or any other characteristics of any particular organism. There are abundant tables and illustrations. The illustrations for the most part are very clear, and to illustrate how up-to-date this is it is noted that a goodly number of the illustrations are photographs made with the electron microscope. The medical student will find this a treasure; the clinical pathologist will find that he will use it often but will probably have to hide it from his technicians. It will be a very useful reference for any physician or bacteriologist and will be found a very nice means of bringing anyone up-to-date on this rapidly developing phase of medical science. It has a heavy paper back, no doubt helping to make possible the reasonable price.

CIBA FOUNDATION SYMPOSIUM ON HYPERTENSION: HUMORAL AND NEUROGENIC FACTORS – Edited by G. E. W. Wolstenholme & Margaret P. Cameron. Published by Little, Brown and Company. Boston. Price $6.75.

THIS book is one of several symposia prepared by the CIBA Foundation and represents a collection of papers and discussions by a number of world famous scientists at a recent meeting at the CIBA Foundation in London. It should be obvious that when a number of the world's great minds congregate to study and discuss one subject, the result cannot fail to be enlightening and instructive. Further comment would be redundant.

Perhaps it should be said that the CIBA Foundation who sponsored this meeting is an international center established as an educational scientific charity under the laws of England. Although it is supported by its founder, CIBA Limited of Switzerland, it is administered independtly and exclusively by a board of distinguished British trustess.

PUBLIC RELATIONS IN MEDICAL PRACTICE – By James E. Bryan, Administrator, Medical Surgical Plan of New Jersey. Published by The Williams & Wilkins Company – Baltimore. Price $5.00.

THE author of this book, Mr. Bryan, although not a physician himself is the son of a physician and has had a wide and varied experience in medical economics and public relations. He has served as executive secretary for a number of large medical societies and apparently has garnered an experience which has enabled him to put together a very excellent volume on medical public relations. He has not left any aspect of the doctor's relationship to the world about him undiscussed. In ten chapters he deals with the relationship of the doctor to his patient, his fee, his office and staff, his colleagues, his community, his medical society, prepaid medical care plans, and to the hospital as well as to himself. The book reads well, is not at all dull or dry or tedious. The entire book is permeated by a subtle understanding and presentation of medical ethics without emotionalism or sentimentality.

It is hard to see how a physician could read this without becoming more understanding and being a better physician from many standpoints. If you have a friend who is just finishing medical school or his internship and is about ready to enter practice, you would be doing him a great service to make this available to him for reading.

REPRODUCTIVE SYSTEM – By Frank H. Netter, M.D., Volume 2. The CIBA Collection of Medical Illustrations. Published by CIBA Pharmaceutical Products, Inc., Summit, New Jersey. Price $13.00.

TO SEE this book is to fall in love with it and to desire it for one's library. Every physician is familiar with the work of Doctor Netter so that the mere mention of the name is sufficient comment on the illustration. An imposing list of well known physicians have collaborated in prepartion of the subject matter.

The organization of the book is well done, the various parts of the male and female reproductive systems having separate sections assigned to them. The normal anatomy of the various areas is abundantly illustrated and explained. For each pathological entity dealt with, and there are many, there are illustrations of the gross pathology and illustrations of the microscopic pathology and of the bacteriology where it is

a factor. On the same page with these illustrations which are done in color, there is an explanatory text which is concise but complete in all essential details. It is well indexed.

Surely the publisher deserves commendation and thanks for compiling this volume and making it available at cost.

A CIBA FOUNDATION SYMPOSIUM ON THE KIDNEY — Arranged jointly with the Renal Association. Edited by A. A. G. Lewis, M.D., & G. E. W. Wolstenholme. Published by Little, Brown and Company. Boston. Price $6.75.

IN JULY of 1953 a group of distinguished scientists, who have done much in the way of scientific research on the kidney, met in London to present their reports and to discuss the subject. This material has all been collected and compiled by the CIBA Foundation in London and under its auspices has been published as a symposium in this book.

The subject matter of the book is arranged in five parts as follows:

Part I — Structural and functional relationships in the kidney.

Part II — Tubular functions other than the regulation of acid-base balance.

Part III — Renal share in the regulation of acid-base balance.

Part IV — General problems of electrolyte excretion.

Part V — Renal share in volume control of body fluid.

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RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

SURGERY OF TRAUMA. A symposium on this subject appears in the Ontario Medical Review for September, 1954. This symposium was held under the auspices of the Workmen's Compensation Board and the subjects discussed include, injuries of the foot and talus, fractures of the ankle joint, fractures of the lumbodorsal spine, acute injuries of the urinary tract, ractures of the humerus and shoulder joint dislocations, fractures of the forearm, elbow injuries, traumatic lesions of the hand, facial injuries, plastic procedures in soft tissue injuries, amputations for trauma, electric shock, shock and fluid balance in trauma, anesthesia in trauma. The Compensation Board's files with its wealth of material was made available for study of any or all of these subjects.

ENDOMETRIOSIS. Eugene S. Cohen, Journ. Okla. State Med. Assn., Sept. 1954. A diagnostic discussion, without discussing treatment.

PULMONARY FUNCTION IN THE TREATMENT OF PULFONARY TUBERCULOSIS. John H. Schaeffer, Journ. Okla State Med. Assn., Sept., 1954. This paper reviews some important ways in which knowledge of respiratory physiology can affect decisions in treating pulmonary tuberculosis. Pulmonary function studies are valuable adjuncts in assessing all patients who need thoracic surgery; they are essential in borderline cases.

THE NEUROSIS FOLLOWING TRAUMA. Medical Annals of the District of Columbia, Sept., 1954. This is Part I of a rather comprehensive discussion of this subject. Trend of the discussion is suggested by the deliberate choice of this title in preference to the hundred year old term introduced by Oppenheimer — "traumatic neurosis." Author is Henry P. Laughlin, of Washington, D. C. Part II is in the October issue of same journal.

ANXIETY STATES — Signs and Symptoms. Ovid O. Meyer, Madison, Wis., article in Northwest Medical, October, 1954.

ULCERATIVE COLITIS. A Medical Progress review by Louis Zetzel, in two parts, in New Eng. Journ. of Med., Oct. 7, and 14, 1954.

THE M'NAGHTEN RULES AND MODERN CONCEPTS OF RESPONSIBILITY. British Med. Journ., Sept. 25, 1954. Those who have an interest in medico-legal matters will find this an interesting article by Eliot Slater, M.D., F.R.C.P., D.P.M., Honorary Physician, Maudsley Hospital.

PANCREATITIS. Zollinger, Keith and Ellison, in The New Eng. Journ. study of 134 cases. Emergency blood amylase levels should be obtained on all patients with pain in the upper abdomen, "gall bladder attacks", injuries to the upper abdomen and complications after surgery on the upper abdomen. Pancreatitis is a frequent cause of both acute and chronic abdominal pain. Plain x-ray films of the abdomen may show paralytic ileus, gallstones or calcification in region of pancreas.

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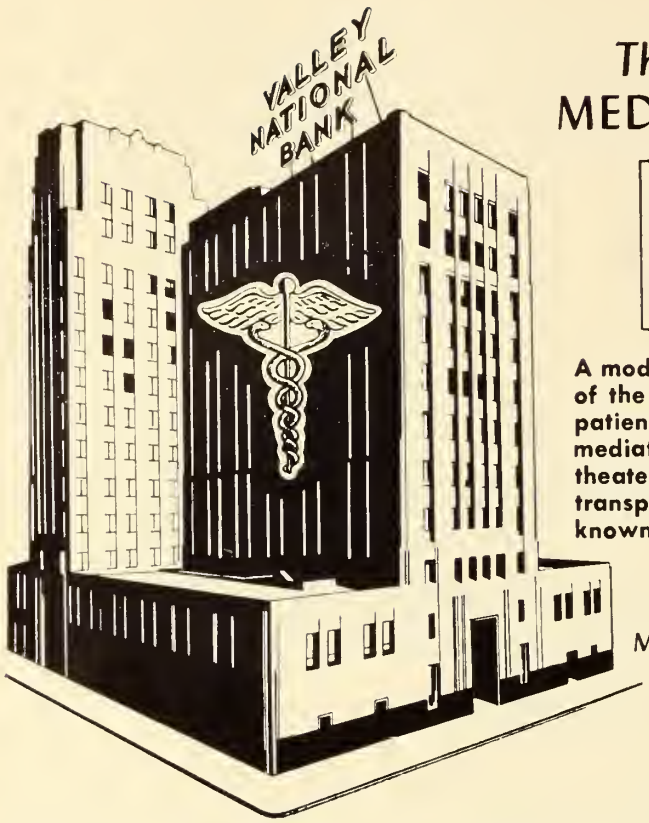
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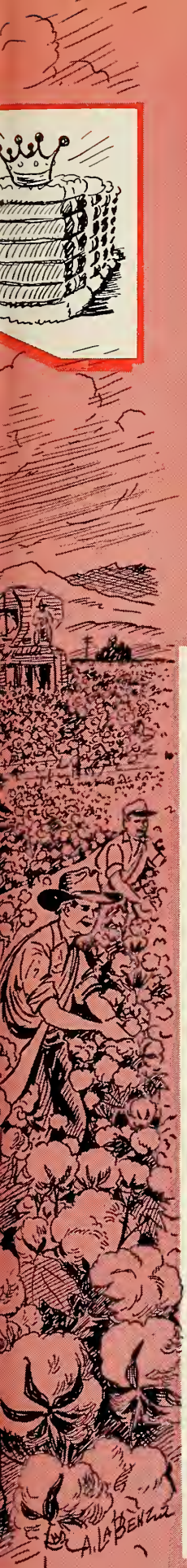
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CALAMITIES FROM THE USE OF CORTISONE IN UNRECOGNIZED TUBERCULOSIS*

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NOW and then a hazardous situation develops in medical practice about which physicians should be warned.

Quite often the ingredients for trouble have been present, and even recognized, but the proof of a hazard is not yet available.

The cortisone-tuberculosis relationship is such a situation. It is generally considered that it is dangerous to give steroids to a patient with a known tuberculosis. It is *not* sufficiently emphasized that pulmonary tuberculosis can and does develop after the corticoid drugs have been given for conditions of the joints, skin, lung, etc., in persons considered (but not proved) to have normal lungs.

We present the proof of such a danger as it has been noted in our part of California. Here is a small series of seven patients admitted to a sanatorium in the Los Angeles area. They were given courses of steroid (adrenal corticoid) drugs in such a relationship to the onset of their tuberculosis that they can be presumed to have been a factor.

The cases will be briefly described in one paragraph apiece, —

K.T. — A 55 year old male was treated for *arthritis* in 1951. Eight cortisone tablets were followed by pain in the chest, as were another course of four, and a course of the drug by injection. No x-rays were taken at the time, tho his family history was positive for TB. A persistent "cold" was studied about a year later and found to be an active tuberculosis, F. A.

B.L. — A 45 year old male received a series of injections of cortisone for *spondylosis* rhizomelique in Dec. 1951. Chest x-ray taken at time of automobile accident in July 1954 showed a lesion which proved to be chronic F. A. tuberculosis with cavitation.

N.S. — A 71 year old male was given treatments of cortisone for a persistent *dermatitis* in August 1954. Four months later he had hemoptysis and chest films were taken. Cavitation, sputum positive for T.B., bronchogenic spread, and death followed in sequence during the next two months.

R.A. — A 44 year old male had 30 injections of cortisone for *asthma* in November 1952. Navy service had been terminated 10 years previously because of x-ray findings of tuberculous scarring, although a laboratory diagnosis was not established. Five months after cortisone therapy a bout of hemoptysis prompted a sputum study which established a diagnosis of tuberculosis and an x-ray showed chronic far advanced disease.

R.W. — A 46 year old woman school teacher was given 4 injections of cortisone in December 1953 for *bursitis.* Twenty years previously she had been treated for active tuberculosis. Two months after cortisone therapy a gastric specimen was found positive for T.B.

J.M. — A 40 year old male who had a severe "bullous *dermatitis*" in October 1953 was given several 25 mg. cortisone pills per day in three courses of 2, 2, and 4 weeks each. X-ray films 5 and 10 years before were negative, but none

* Read before the California Trudeau Society, Los Angeles, March 18, 1955.

was taken at the time of the skin therapy in spite of a "cigarette" cough. A year later he had a chest film taken as a part of a physical examination, and he was found to have a chronic cavitative infectious tuberculosis with a chronic bronchogenic spread.

H.T.G. — A 59 year old male has had moderately severe *arthritic* symptoms for "years". He received a series of cortisone injections the last 3 months of 1952. In March 1953 a chest film revealed an infiltrative process in right apex. A second film one year later shows tuberculous cavitation in the same area.

(We have seen two additional cases since this report was written).

A final case is added because 'adrenal extracts' were used in the era just before Hench described cortisone in the spring of 1949.

G.M. — A 69 year old woman received adrenal cortex by injection for a period of two weeks, followed by one month of oral adrenal cortex, for an *ostcoarthritis.* In August 1950 a survey film led to a diagnosis of chronic tuberculosis, with cavity and positive sputum.

Summary and Conclusions

1. Treatment of non-tuberculous conditions with the adrenal corticoid drugs in quite a usual procedure. They are used for arthritis, bursitis, dermatitis, asthma, emphysema, and many other conditions. Their cost is lower, and they are now more available. Patients often exert pressure on physicians to use them, whether indicated or not.

2. It has been demonstrated that these steroid drugs are hazardous to use in the presence of a recognized tuberculous lesion, especially if the lesion is active. The lung symptoms may be temporarily suppressed, but the bacilli grow and the disease often flares when steroid therapy is discontinued. The hazard is somewhat dependent on the individual and total dosage, but all of the common preparations (cortisone, hydrocortisone, and ACTH) have the same effect.

3. We have reported a small series of seven sanatorium patients. Their past history indicates that, —

a. Five different disease conditions were the indications for steroid therapy.

b. Tuberculosis was not excluded by x-ray ot any of these cases before steroids were used, tho two of them had a history of previous TB.

c. Active tuberculosis was found to be present in the weeks or months after cortisone and allied drugs had been used.

d. The patients probably were infectious between the activation of their lesion and the diagnosis of tuberculosis. Two of them had required close nursing care, and one was a teacher.

4. There is no way of accurately estimating the number of persons treated with the steroid drugs, nor how many people with tuberculosis are so treated. . . . The seven cases treated in our small asnatorium represent 1.8 per cent of the admissions. . . The number of unrecognized cases of active tuberculosis in the United States is estimated at several hundred thousand, and the number with latent tuberculous lesions would be several times that figure . . . The chance that a fairly considerable number of people with unrecognized TB may be given the corticoids surely exists. This is especially so in the older age groups, where arthritis, et al., and tuberculosis of the lungs and other organs may coexist.

5. We suggest that certain precautions be regularly observed in the use of cortisone, ACTH, and similar drugs, —

a. A chest x-ray should be taken beforc treatment stars, and shown to be negative.

b. If the x-ray contains an 'inactive' lesion, and corticoid therapy is needed, chemotherapy for tuberculosis should be added as a precaution.

c. Chemotherapy for TB might be used if the tuberculin skin-test is positive and a family history of TB is present. The relative risk in using the steroids in the presence of a probably tuberculous lesion, or even of a positive skin-test, is not certain at present, but it would seem wise to minimize it by a protective blanket of anti-TB drugs. Experiments in animals have shown that tuberculosis is not aggravated, and the animal may do well if anti-tuberculosis drugs are used with the steroid drugs. . . . We have used cortisone in tiny but effective doses for allergic skin lesions, severe herpes of the face, etc., without harm to the tuberculous lung lesions undergoing chemotherapy.

6. Since the physician in general practice will give most of the steroid drugs it is hoped that the potential hazard may be drawn to his attention. The safeguard is easy to obtain, and is the same old procedure so often suggested for other reasons, — an x-ray film of the chest. . . .

Adrenal corticoid therapy should be added to pregnancy, diabetes, contact with tuberculosis, the teaching profession, food-handling, etc., as a special reason for having a chest x-ray.

CALCINOSIS AND COLLAGEN DISEASES

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INTRODUCTION

Is calcinosis a disease entity? The modern school of thought is that calcinosis is not a disease entity and that the diagnosis of calcinosis serves only to cloud the primary disease. This is in direct contrast to the old school of teaching that calcinosis universalis and circumscripta are disease entities of unknown etiology. In this paper calcinosis is used to denote the pathological deposition of the calcium salts, usually symmetrically and in such areas as the skin and subcutaneous tissues. It does not include those metastatic calcifications due to known causes such as Vitamin D intoxication, renal failure, carcinomatosis, hyperparathyroidism, et cetera.

Calcinosis universalis (Fig. 1) denotes generalized calcification of the subcutaneous tissue, fascial planes of the muscles and some tendons, as well as the cutaneous tissue. Calcinosis circumscripta (Fig. 2) suggests limited deposits of the calcium salts, usually in the vicinity of the larger joints, and may be limited to the feet or hands. At best such terms are equivocal in description even though they are widely used. More often than not, it is impossible to determine where the circumscripta ends and the universalis begins. This is well borne out by the vagueness of various definitions of these terms found in the literature.

Recently there has been more consideration of the relation of calcinosis to the collagen diseases. Reviews of the literature concerning this subject have revealed that a substantial majority has shown definite evidence of a very close relation with some one of the collagen diseases. It is well recognized that circumscribed calcinosis is found much more frequently in females than in males, the ratio being from six to ten to one, and is seldom seen before the second decade of life. In contrast the calcinosis universalis is still more prominent among females but in the ratio of only approximately three to two, and usually occurs within the first two decades of life. The literature abounds with the recognition of certain other conditions such as Raynaud's phenomenon, scleroderma, dermatomyositis, lupus erythematosus and rheumatoid arth-

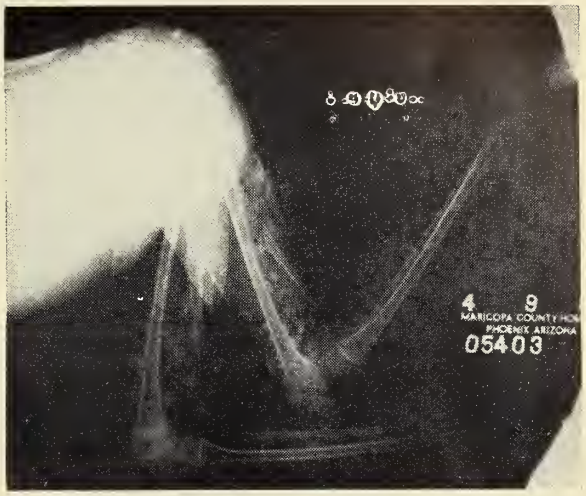


Fig. 1 — Case of calcinosis universalis which had its onset at the age of 18 months. Patient is a male child and has clinical and microscopic findings consistent with a dermatomyositis and severe flexion contractions of the extremities.



Fig. 2 — Calcinosis circumscripta in a white female, age 39 yrs. There was definite evidence of Raynaud's phenomenon and later early scleroderma.

Read at Memorial Hospital, Phoenix, Arizona, June, 1954.

ritis, existing along with the diagnosis of calcinosis. In other words recognition is made of the association of calcinosis with these conditions but they are infrequently correlated as possibly being one disease.

It should be explained here what is meant by collagen diseases, a term being first adopted by Kemperer. Several diseases of unknown etiology have been grouped together as collagen diseases because of clinical likenesses, similar sites of pathological involvement and possibly common pathogenesis. These include those conditions known as rheumatoid arthritis, lupus erythematosus disseminatus, scleroderma, dermatomyositis, periarteritis nodosa, rheumatic fever, and probably others.

The clinical manifestations of these various diseases are frequently so complicated and so similar that on occasion long periods of observation are necessary before a definite label may be assigned and occasionally there appears to be a mixed diagnosis in a single patient. The histopathology is very similar and frequently impossible to clearly differentiate. These diseases are so grouped because they involve primarily the connective tissues of the body with fundamentally the same type of fibrinoid degeneration of collagen, although it is not regarded as specific for the classification of disease. Collagen is usually referred to as the intracellular connective tissue, ground substance and fibrogens. The term collagen diseases is not a permanent one at this time but rather should be regarded as a temporary designation subject to possible revision as our knowledge advances.

ETIOLOGY

The etiology of calcinosis as considered in this paper is theoretically unknown. The majority of the case reports have shown findings in addition to calcinosis which tend to incriminate scleroderma or dermatomyositis, and infrequently one of the other collagen diseases. It appears that calcinosis is merely a symptomatic finding. The percentage of the appearance of calcinosis in scleroderma is not definitely known as x-rays have not been taken of sclerodermatous patients often enough to provide adequate data for determining its prevalence. It has been stated that diffuse calcinosis may occur in approximately fifteen percent of the cases of dermatomyositis, and that approximately forty percent of the cases of calcinosis present some gross evidence of scleroderma or dermatomyositis(2); however review of literature and protocol cases indicates the latter incidence should be more than double the forty percent.(1)

Etiological factors of calcinosis are purely speculative. This is borne out by the multitude of well documented theories for the explanation of the formation of abnormal calcific deposits. Since this clinical finding was first described by Teissier in 1877 and first associated with scleroderma by Weber in 1878, it has remained essentially *status quo* until the past decade.

In considering the conditions of calcinosis circumscripta and calcinosis universalis, it is becoming more apparent that these clinical syndromes are more closely associated with what is commonly known as the connective tissue diseases, or possibly better known as collagen diseases at the present time; as previously noted, calcinosis circumscripta being more commonly associated with scleroderma, lupus erythematosus disseminatus, rheumatoid arthritis or Raynaud's syndrome; and calcinosis universalis being more closely associated with dermatomyositis or sclerodermatomyositis. As pointed out by Wheeler, some other form of the collagen disturbance is practically always presenting in a patient with calcinosis circumscripta or universalis.(1)

The following theories pertaining to the diagnosis of calcinosis circumscripta or universalis are presented mainly for historical purposes.

(1) Endocrine disturbances

Evidence pertaining to endocrine conditions, particularly with regard to the parathyroid glands, has remained unproven. This is considered very unlikely in view of the records of past hemiparathyroidectomy with subsequent normal blood concentration of phosphorus, calcium, and normal phosphatase activity. The administration of parathyroid hormone has proven useless and microscopic examination of parathyroid glands has given no consistent evidence of abnormality. The hormonal influence of the newer compounds of Cortisone and ACTH has not been adequately evaluated in order that a definite conclusion may be derived from their value, but any results obtained from the two hormones may be expected to be only temporary and their use limited to substitution therapy to relieve inflammatory reactions.

(2) Metabolic disturbance of calcium and phosphorus

Some have contended that there has been a marked tendency to retain absorbed calcium

and phosphorus and as the solubility of calcium or phosphorus is reached in the blood, local deposits of calcium phosphate may occur in the tissues at certain localities. This has been countered with the opinion that naturally there has been a retention of these minerals to produce their deposits in the local tissues and that the mode of their retention is another question and no uniform explanations have been found acceptable.

Under normal conditions the amount of calcium and phosphorus in blood serum is maintained within narrow limits. The equilibrium is such that at normal carbon dioxide tension the interstitial fluid and the blood serum are essentially saturated with calcium and phosphate ions, and if an increase of the phosphate ions without a compensatory decrease in the calcium ions or the reverse occurs, precipitation of insoluble calcium phosphate occurs. Therefore, when the calcium and phosphate ions exceed a certain limit at a given carbon dioxide tension, the insoluble salt is precipitated. Should the carbon dioxide tension decrease producing a more alkaline medium, fewer calcium and phosphate ions can be held in solution, and calcium phosphate is again precipitated. Such a precipitation may occur in any of the body tissues but due to the normally low carbon dioxide tension in such tissues as the kidneys, lungs, and stomach, one would expect these to be the usual sites of precipitation. However, in calcinosis circumscripta or universalis, viscerocalcification is not the finding.

(3) Trauma

Traumatic injury of tissues may be local or generalized, as seen in certain of the connective tissue diseases, and the exact type of injury in some circumstances may be bizarre in nature. Infections may produce a form of injury to tissues. These traumatic injuries may cause local and diffuse destruction of tissue followed by calcium salt deposits at such sites. Fisher and Glick have indicated evidence that injured tissue may serve as a substrata for a phosphorus releasing enzyme so that calcification may occur as in normal calcification of bone.

(4) Vascular disturbances

In these cases there is frequently evidence of vasomotor disturbance with diminished blood supply in certain areas, particularly in scleroderma and Raynaud's syndrome. In certain instances these vascular disturbances may produce local changes in the tissue which is predisposing to deposition of calcium salts. This may be as a result of local nutritional defects producing scarring and certain degenerative changes. Some have expressed the opinion that fatty degeneration with the formation of fatty soaps occurs, then deposition of calcium phosphate and carbonate.

(5) General nutritional deficiency of the "anti-stiffness" factor

Experiments have been conducted by J. Willem and his group and by Landsbury,(3) where it has been shown in guinea pigs that a deficiency of a certain nutritional factor known as the "anti-stiffness" factor can produce circumscribed interstitial calcinosis, as well as many other of the clinical findings associated with the conditions known as collagen diseases. However this factor is not considered the primary cause of these calcific deposits.

(6) Diseases of the connective tissues

By many it is felt that calcinosis circumscripta and universalis are not disease entities. In this opinion I am forced to concur by the information at hand. As the literature is reviewed, the majority of the cases as previously reported have presented certain clinical findings of evidence of other disturbances of the connective tissues, and most cases have shown definite evidence of either scleroderma, dermatomyositis or sclerodermatomyositis. For this reason I feel that calcinosis is a frequent complication of certain collagen diseases and, as such, should be considered secondary to them; as suggested by Wheeler the diagnosis should be scleroderma with circumscriptive calcification, or dermatomyositis with universal calcification, or some other variation of primary diagnosis showing the calcinosis to be secondary in order to avoid the neglect of the primary diagnosis. True, the etiological basis of these diseases have not been established nor the cause of their clinical similarities, similar sites of pathological involvement, and possible common pathogenesis. Several diseases have been grouped together as the collagen diseases. These are:

Rheumatic fever
Rheumatoid arthritis
Lupus erythematosus disseminatus
Scleroderma
Dermatomyositis
and possibly
Scleredema adultorum

Malignant nephrosclerosis and
Serum sickness.

(7) Other factors

Other factors have been considered to be the cause of calcinosis but their significance is hardly worth mentioning. These include, for example, placental or maternal disturbance of calcium metabolism, exposure to cold, et cetera.

TREATMENT

Therapy in calcinosis is basically the determination of the primary cause and the treatment of that condition, which is mainly palliative in nature. In certain instances during exacerbations of symptoms therapy with Cortisone, ACTH, or Hydrocortisone may be helpful for short periods of time. Special attention to the general nutrition and health is of unquestionable value. There is no known cure at this time.

SUMMARY

This paper has dealt mainly with discussion of possible etiology and basis for calcinosis, both circumscripta and universalis. The information at hand suggests that this condition is not a clinical entity but a clinical finding of another primary condition and usually associated with the more severe forms of collagen diseases.

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PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE

A sixty-five-year-old woman was referred to the hospital because of fatigue.

At the age of sixteen, the patient had become "anemic." She did not have excessive menstrual bleeding, bleeding from other sources or evidence of chronic infection; her appetite was good. At this time, because of frequent periods of fatigue, iron pills were prescribed, without definite improvement in symptoms. The symptoms recurred over the years, and the patient continued to take iron, stopping the pills when she felt better and starting them again whenever she felt tired. Twenty-four years before admission she was also advised to eat substantial quantities of liver. Two years later a hemorrhoidectomy and a tonsillectomy and adenoidectomy were performed in the hope that these procedures would alleviate the anemia. At the same time she began to receive "liver shots" every two weeks, which were continued up to the time of admission. She had continued to take iron during this time, and more recently, for an indefinite period, she had been on folic acid therapy. Seven years before entry gastrointestinal and gall-bladder series were negative. At this time all medication but the iron was stopped, after which the symptoms became worse. Four months before admission after a bout of diarrhea lasting two weeks, a physician found the liver to be enlarged.

The patient had had three uneventful pregnancies. She had noted some constipation while on iron therapy, but otherwise the systemic review was negative. Several friends had asked why her skin had grown darker; however, the patient had not noted any obvious change and thought she was "tan". She was an occasional drinker. She had not had any bleeding weight loss, chills, fever or jaundice. Her appetite was considered adequate.

Physical examination showed a well developed woman with spotty, brown pigmentation of the skin of the face and arms; the pigmentation was increased in the creases of the palms. The mucous membrane of the mouth was not pigmented. No icterus was noted. There was a Grade 3 aortic systolic murmur radiating to the neck and a Grade 2 mitral systolic murmur. The aortic second sound was greater than the pulmonic. The edge of the liver was tender and was felt 5 fingerbreadths below the costal mar-

gin. The tip of the spleen was palpable.

The temperature was 98.6°F., the pulse 90, and the respirations 20. The blood pressure was 170 systolic, 84 diastolic.

The urine had a specific gravity of 1.025 and showed a slight trace of albumin but was negative for sugar. The sediment contained 6 white cells, a rare red cell and 3 hyaline casts per high-power field. Examination of the blood revealed a hemoglobin of 11.2 gm. per 100 cc. and a red-cell count of 3,300,000. On smear the red cells were achromic and varied in size, and the platelets were decreased. The white-cell count was 6900, with 71 per cent neutrophils, 23 per cent lymphocytes, 1 per cent eosinophils, 1 per cent basophils and 4 per cent monocytes. The MCV (mean corpuscular volume) 30.7 micromicrogm. (normal, 27 to 32 micromicrogm.), and the MCHC (mean corpuscular hemoglobin concentration) 31.2 per cent (normal, 33 to 38 per cent). The prothrombin time was normal and the sedimentation rate was 18 mm. in one hour. The alkaline phosphatase was 1.8 units, the total protein 6.25 gm., the albumin 4.40 gm., and the globulin 1.85 gm. per 100 cc. A glucose tolerance test was reported as follows: fasting sugar, 90 mg., half hour, 186 mg., one hour 182 mg., two hours, 102 mg. and three hours, 90 mg. per 100 cc. A bromsulfalein test showed 8 per cent retention of the dye. The urinary urobilinogen was 1.0 Ehrlich units. One stool specimen gave a positive guaiac reaction; three others were negative. Gastrointestinal and gall-bladder series done at another hospital a month before entry were reported as ngative.

On the second hospital day an operation was performed.

DR. O. O. WILLIAMS

DISCUSSION

This case is essentially a study of abnormal or excessive pigmentation of the skin associated with a prolonged but mild systemic disability. From a physiological standpoint disturbances in pigment metabolism is still a mysterious process but the type, distribution of the pigment deposits in the skin, and only a few general symptoms possibly of minor degree often lead the Dermatologist or Clinician to a correct diagnosis. To summarize the findings in this case, the patient had an anemic of many years' duration which was relieved at times by administration of iron, at other times particularly when she was young obtaining no relief from her almost constant fatigue. Later, liver and folic acid were administered. Clinically, she had no findings other than the fatigue and weakness. Later in her illness she developed a dark skin which was noticed by her friends.

Physical findings were those of a brown pigmentation, spotty in character, but especially involving the face and arms and particularly mentioned is the increased pigmentation in the creases of the palms of her hands. The cardiac murmur would tend to indicate an aortic stenosis probably arteriosclerotic in type. There does not appear to be a congestive heart failure present. The liver and spleen, however, were enlarged.

The laboratory data seems to be of some significance though not too helpful. The urinary findings may be entirely arteriosclerotic in nature as the patient is in the arteriosclerotic age. There is also a moderate anemia present. Of the indices only one is significant, that is a mean corpuscular volume of 100. This is indicative of a macrocytic anemia or at least a predominance of macrocytes over microcytes. The M.C.H.C. is less than normal indicating hypochromia. The glucose tolerance test is not abnormal but might be considered border line. No sugar examinations are reported in the urine.

We then have a chronically ill patient 65 years of age who has been taking iron and other antiaemic drugs for many years, who has more recently developed an enlarged liver and spleen associated with a spotty brownish pigmentation of the skin of the face, arms and palms of the hands and who now has a macrocytic hypochromic type of anemia.

The last statement in this protocol is very disturbing, that is, on the second hospital day an operation was performed. Since there were no acute symptoms given in the protocol one has to assume that either information is being withheld or because, of the distribution of the pigment, there was some indication that a malignancy might be present in the abdominal cavity. Frequently, this type of pigmentation is associated with malignancy. However, there may be another reason which is not too good a reason and that is that curiosity got the better of the physicians and surgeons in this particular case and they decided to take the easy way of making a diagnosis by exploratory laparotomy. We can not, however, ignore the fact that the patient may have had a natural tan from exces-

sive sunlight as she herself thought. However, I am going to assume that the tanning was the result of abnormal or excessive pigmentation.

With the help of Dr. Louis G. Jekel and of the textbook on Dermatology by Becker and Obermayer I am going to discuss these abnormal pigmentations, at least to a certain extent. The first one I would like to discuss is scleroderma or localized scleroderma referred to as morphea. These can be ruled out readily because of the fact that the pigmentation was not distributed over the entire body and there were no areas of depigmentation mentioned. In addition scleroderma itself probably has a more progressive course than this patient had.

The second condition is Addison's disease or replacement of the adrenal cortex by either tuberculosis, tumor or some other disease. The distribution of the pigment and the description of its appearance would suggest a melanin pigmentation but the other features associated with Addison's disease such as hypotension, loss of weight and evidence of the emaciation are absent. A pituitary disease is likewise not likely. Frequently in the syndrome of pituitary cachexia there is also atrophy of the adrenal glands and this may be associated with pigmentation of the skin. These patients, however, are just as debilitated as those found in Addison's disease. It is not believed that this patient has the asthenia usually associated with adrenal cortical insufficiency seen in Addison's disease although the pigmentation is distributed somewhat similarly.

The third condition to be discussed is that of chloasma or so-called liver spots. This pigmentation is almost identical in distribution to that seen in this patient, is composed of melanin and is frequently associated with disorders in the female pelvis such as inflammation or tumors. There is nothing to indicate in the physical examination that this patient had any pelvic disease. While an examination was not recorded we may assume that the genital tract was normal. Often, however, in chloasma there is no associated pelvic disorders, no tumors or any other condition which might cause the pigmentation. As the condition occurs most frequently in younger women and as there is no indication of pelvic disease I am inclined to discount chloasma as a cause for this patient's pigmentation.

The fourth condition and a very good likelihood is that of acanthosis nigricans. According to the text books this could very easily be an acanthosis nigricans. Its distribution is somewhat similar to that with the exception that the folds beneath the breast and in other areas such as genitalia are not affected. However, the absence of this would not discount the possibility of acanthosis nigricans. The patient is in the age group to have this condition. Acanthosis nigricans is frequently, though not invariably, associated with an intraabdominal malagnancy of some type and again we might have a very good cause for an exploratory laparotomy to determine if there is a malignancy present. I am not familiar with the condition clinically though I have seen a few sections of acanthosis nigricans but from the description given in the book it appears grossly more papillary than is described in this case. While acanthosis nigricans certainly from a histological standpoint is more papillary, clinically I would assume that it would suggest a much more roughened skin than one is led to believe this patient had. We have no indication of an abdominal malignancy even though a fairly good examination was made. The enlarged liver could of course be a malignancy engrafted on a cirrhosis. However, we cannot assume this to be true. One could postulate that this patient has two conditions, one of which was an increased visceral hemosiderosis from th deposits of iron or iron derivatives in th liver and other organs associated with a hepatoma. However, there does not seem to be any definite reason for considering a malignancy in the liver in this case.

The next condition is metallic pigmentation. One of these, particularly arsenic, involves the creases of the palms of the hands. However, it is more of a keratosis than an increase in pigmentation. The other metallic poisonings can be discounted on the view of the fact that the history does not indicate that this patient has been taking anything other than iron of a metallic character.

The final and last condition which I would like to discuss is that of hemochromatosis which I believe this patient had. The history of prolonged taking of iron associated with an anemia in which one would feel that there is a constant destruction of red cells would lead a person to believe that hemochromatosis is a very likely possibility. One can not discount the macrocytic type of anemia present. While this patient received liver and other antianemic

drugs might lead one to believe this patient had a deficiency or so-called Addisonion's anemia which was only partially treated. Anyway there was a lack of iron as there was hypochromia present. The onset of hemochromatosis follows a long period of abnormal iron metabolism. By experimental studies it has been found that in hemochromatosis there is not necessarily an increase in red cell destruction. The theory held at the present time by investigators is that ordinarily iron has an upper limit of absorption. The intestinal mucosa apparently refuses to absorb iron over and above the needs of the body and it is excreded in the feces. In hemochromatosis, however, it is found that this inhibition of block has been lost or is a congenital block and that the patient over long periods of time absorbs iron very readily over and above that needed by the body. The iron is deposited as actual iron particles are as hemosiderin in the different organs of the body. The history of long injection of iron this may have been absorbed in greater quantities than needed. The patient eventually developed a large liver and spleen and then a pigmentation of the exposed parts of the body such as occurs in hemochromatosis. There has been no definite involvement of the pancreas in this case though the pancreas can be normally functioning in even severe hemochromatosis. Frequently, there are acute abdominal episodes in hemochromatosis and it is quite possible that during the short stay in the hospital this patient had an upper abdominal crisis which the surgeons or the internist or both felt it imperative that an exploratory laparotomy be done. Likewise, in hemochromatosis of the liver there is also frequently no abnormal functioning of the liver in most of the tests done. The tests are not entirely reliable especially until the latter part of the disease. There is one feature in this case that would suggest there is possibly some liver dysfunction and that is the macrocytic type of anemia which frequently is associated with some type of liver disease frequently more severe than this case has shown. It is not believed that the patient has a gastric carcinoma causing the macrocytic anemia nor a cecal carcinoma which likewise cause a macrocytic anemia. The GI series was reported as entirely negative. Without further discussion I feel that I am forced to make a diagnosis of visceral hemochromatosis with pigmentation of the skin, this pigmentation probably being melanin rather than hemosiderosis though one or both may be present in the pigmentation in hemochromatosis.

DIAGNOSIS

Hemochromatosis, generalized.

DR. JAMES R. MOORE

An outstanding and unexplained complaint of fatigue associated with pigmentation of the skin and hepatomegaly suggests that rather rare condition of hemochromatosis. This is a disease of, or at least associated with, a disordered metabolism of iron, the pathogenesis of which remains quite obscure in spite of considerable clinical and laboratory research. In this condition there is a marked increase in the total iron content of the entire body and an associated fibrosis of various organs and tissues of the body. It is the opinion of some investigators that the excess iron is the etiological factor in the development of this fibrosis. Certain clinical factors of the disease occur in varying degree according to the organs or specialized tissues affected and the degree of involvement. Thus, fibrosis in the liver results in enlargement of that organ and impairment in function, of a moderate degree at least. Liver function tests may be negative since it has been shown that the cirrhosis of hemochromatosis is relatively benign as compared with the other types of cirrhosis showing an equivalent degree of fibrosis. Fibrosis in the pancreas when of a degree to involve the islands of Langerhans results in a typical diabetes mellitus. Here again the involvement, particularly of the islands, may be of insufficient degree to produce a frank diabetes.

The accumulation of excess iron is not well understood, but in general it is due

1. To increased quantities introduced into the body as by transfusion or orally either in foods or as medication, or

2. To factors affecting the rate of absorption.

It was rather startling to learn that very little iron is excreted normally through the usual excretory mechanism of the body and that the body has no known effective method of excreting iron other than by hemorrhage. Once iron is introduced into the tissues of the body therefore, there it remains unless, of course, the individual has large or repeated hemorrhages. On this basis bleeding has been used with some success as a therapeutic measure and at present this is the only known method of treatment whereby the mechanism producing hemosiderosis

or hymochromatosis can be reversed. Arrowsmith, in the Archives of Internal Medicine of October, 1953, reports twelve out of fifteen patients thus treated, showing a satisfactory response. Hemorrhage has also been called up to explain the great rarity of this condition in women, the monthly menstrual loss of blood apparently acting as a regular withdrawal of the iron from the body.

Most investigators have considered the accumulation of iron in the tissues to be due to an inborn error of metabolism, permitting increased absorption without increasing excretion since this does not occur as a normal process anyway.

With the above background, the clinical course of our case today may have been as follows:

She had a chronic hypochromatic type of anemia for which she had taken iron quite regularly for a period of nearly fifty years. From this combination of oral and parenteral introduction of iron she very gradually built up an excess of iron in her tissues to the point she developed fibrosis of the liver with signs of cirrhosis and hepatic dysfunction. There was also pigmentation of the skin, but fibrosis of the pancreas had not progressed to the point where clinical signs of impaired function with diabetes or low glucose tolerance test could be determined.

While this woman undoubtedly was gradually developing this condition over a period of many years, the presence of an excretory outlet in her monthly periods for the store of iron which she was gradually adding to her system probably prevented the development of the clinical picture of hemochromatosis until well after her menopause.

SUMMARY:

1. Chronic achromic anemia.
2. Fairly regular ingestion of iron over a fifty year period.
3. Development after the menopause of
   a. Fatigue.
   b. Skin pigmentation, especially of the forearms.
   c. Hepatomegaly with impaired liver function as shown by
      1) Bromsulphalein retention of 8% compared to a normal of 5%.
      2) One Ehrlich unit of urinary urobilinogen.
   d. No, or minimal, pancreatic involvement as shown by the normal glucose tolerance test.
4. Operation was probably to confirm the diagnosis by demonstrating the presence of hemosiderin in the tissues and was either
   a. A liver biopsy, which is the best and most accurate, or
   b. A biopsy of the gastric mucosa, which is very good and considered the second best, or
   c. A skin biopsy, in which case the pigmentation would be melanin rather than hemosiderin, although the latter may be found about the sweat glands.

DIAGNOSIS

Hemochromatosis.

P.S. With both Doctors Lee Foster and Onie Williams on for discussion, I did not have the temerity to discuss the circulatory and hematologic aspects of this case.

DR. R. LEE FOSTER

In searching for a diagnosis in this case, we must look for some disease which is chronic in nature, productive of chronic fatigue and anemia which improves with iron therapy and which will produce slowly increasing pigmentation of the skin. It must also result in hepatomegoly, splenomegaly and possibly some cardiac pathology. It seems almost too easy for there is one disease which seems to fit perfectly.

Note these quotations from the description of the disease as given by various sources.

"The disease is rare indeed." This causes it to rate high among possibilities here so far as I'm concerned. A large midwest clinic saw only 30 cases in 15 years and Toronto General Hospital saw only 9 cases in 13 years. Autopsy incidence is estimated to be from 0.001 to 0.4%. The physician in general practice might expect to see one case in his lifetime. Only 15 cases of this disease in the female have been recorded in the literature.

The cause is unknown. Various factors including hereditary tendence, chronic copper poisoning and Alcohol have been blamed.

The Disease develops slowly over the years with symptoms being weakness, spotty irregular bronzing of the skin which gradually deepens over the years with the mucous membrane being spared this pigmentation. Diabetes with attendant symptoms occurs in the many cases and is the first symptom in about 25%. Abdominal swelling may occur with enlarged liver and usually an enlarged spleen being found.

The patient is mildly anemic. There is no sign of hyperactive regeneration of the red blood cells even on vital staining.

Cardiac enlargement and failure may and frequently do occur.

The disease which I have been discussing is Hemochromatosis, sometimes known as "Bronze Diabetes". I submit to you that this patient fits the description well except that she does not have diabetes. We know it was suspected as a sugar tolerance test was done. This did show a little diabetic tendency I suppose but I believe would be considered as within normal limits.

The disease is characterized by deposits of large amounts of iron in the body tissues and especially the liver. It has been estimated that with a normal daily intake of 30 mg. of iron it would take the body from 3 to 40 years to deposit the amount of iron found in the livers of these patients. It is theorized that the mild iron-deficiency anemia is due to the large demand of the tissues for this iron at the expense of the blood. This may explain the improvement with iron therapy and the relapse when discontinued.

There are other conditions which may be responsible for some of these findings but none seem to fit so well with all of them. For instance, pigmentation of the skin may be caused by such things as pellagra, argyria, exophthalmic goiter, chronic arsenic poisoning and Vagabond's discoloration, but these need only be mentioned to exclude them so far as this protocol is concerned. Addison's disease, Hodgkin's disease and ochronosis deserve a little more thought but have no supporting evidence of their existence here.

The hepatomegaly suggests other possibilities as a cirrhosis. This is usually productive of more disturbance of the blood protein, prothrombin, etc. which in this case were normal. There were no indications of circulatory disturbance, such as gastro-intestinal bleeding or esophageal varices. The one positive guaiac test on the stool is not significant unless a meat-free diet was certain. Liver abscess or carcinoma is ruled out by the long duration.

Banti's disease here rears its ugly head and demands recognition. I can't bat it down very easily. It would fit quite well but usually in Banti's at this stage the spleen is more than "palpable". It is usually huge and the liver which is at first large then becomes relatively smaller. The diagnosis of Banti's would solve one riddle which worries me "Why did they operate? And why so *soon* (on the second day). Of course they could have been going to biopsy the liver but a punch biopsy or a skin biopsy would have done as well. I assume then that the preoperative diagnosis was Banti's disease and a splenectomy was intended.

In spite of this I believe Banti's would not have been expected to show the extent of pigmentation described and I return to my first choice for a diagnosis.

My diagnosis:

1st Choice — Hemochromatosis.

2nd Choice — Banti's disease.

DIFFERENTIAL DIAGNOSIS

Dr. Bernard M. Jacobson: The patient had taken iron by mouth for about fifty years and liver extract intramuscularly about every two weeks for approximately twenty-two years. What was the anemia that this patient had? Was she chlorotic at the age of sixteen? There was no mention of a green color, no anorexia and no apparent dramatic response to iron. In view of the type of blood picture later on, I should suspect that she had a low-normal hemoglobin, which is not uncommon in women, a condition that is sometimes called "congenital hypoplastic anemia," consisting of a life-long rather low hemoglobin with little change in the individual red blood cells. That condition is compatible with a long and useful life and is often seen together with a neurasthenic constitution. I should guess that the previous blood picture and the previous reason for iron administration had no relation to the present illness.

I should like to know about the menstrual history; she had three pregnancies, so at least she did not have amenorrhea. I am not told when she had the menopause — when she ceased to lose blood; I assume that it was at least twenty years before admission, at the age of forty-five. Was she drinking more than an occasional amount of alcohol? The large liver was of at least four months' duration. Was this just a low liver edge or a slightly enlarged liver with a low upper border? Was there any pigment in the axilla?

Dr. Chester M. Jones: The upper border of the liver, by percussion, was in the fourth interspace.

Dr. Jacobson: That is a large liver indeed.

Presumably, the operation that was performed on the second hospital day was a biopsy of some sort, and I suspect it was a skin biopsy; I do not think she had enough preparation for a liver biopsy.

There is no question that this patient had hypertension, probably hypertensive heart disease and probably aortic roughening. The aortic second sound was well preserved; I do not suppose that she had aortic stenosis.

The specific gravity of 1.025 shows good renal function. The blood seems to have been normocytic and fairly normochromic, with not too much anisopoikilocytosis — in other words, a nonspecific blood picture. The leukocytes were well preserved. I am uncertain how much significence to attach to the statement that "the platelets were decreased." One might conceive of a hypersplenic phenomenon, but I doubt that. I get no help whatever from the Wintrobe indexes. It is interesting that all the chemical determinations of liver function were apparently normal. I am not told about the bilirubin; I assume that the patient was not jaundiced.

In the presence of pigmentation, hepatomegaly, mild splenomegaly and only mild non specific anemia, with fairly good liver function, a few conditions bear consideration. If I look at the pigmentation alone, from the description in this record I do not see how I can make any diagnosis. Addison's disease is certainly well ruled out by the good nutrition, general good appetite and hypertension. This does not look like the distribution of the pigment of acanthosis nigricans. Since I am not told about any bluish tinge to the pigment, I shall discount such things as argyria, bismuth intoxication or chronic arsenic poisoning. There is one form of pigmentation that is not usually considered. This is produced by certain sun creams that women use on their faces and on their arms, which, in the course of use, get in the creases of their hands and which, when exposed to the sun, cause pigmentation or tanning. That possibility is something I cannot rule out.

The trap that apparently has been set for me is hemochromatosis. The description is not that of the bluish-gray pigmentation of hemochromatosis; it is brown. In color it fits the pigmentation of Addison's disease. The patient had been taking iron most of the time for fifty years, and pigmentation and a palpazble liver and spleen had developed. On the other hand, there are some important reasons why this was not a case of hemochromatosis. In the first place, she was a woman; about 90 cases out of 100 are in male patients. The few women in whom it does occur almost all have an abnormal menstrual history. They do not bleed enough. This patient had had three children; hence she must have had a good menstrual history. The pigmentation was brown instead of bluish gray. Diabetes was absent; in 75 per cent of the cases there is diabetes or a glucose tolerance test suggestive of diabetes. In the few cases of proved human hemochromatosis related to increased absorption of ingested inorganic iron, the diagnosis has been an extremely bizarre one indeed. The absorption of inorganic iron in a normal person on a normal diet is usually considered to be too low to produce hemochromatosis. A woman who menstruates properly, by her monthly mild bleedings, is protected against hemochromatosis. This patient certainly had not been on the deficient diet described by Gillman and Gillman in South African natives who develop hemochromatosis.

Looking at the liver and spleen per se, I must rapidly go through the usual motions. Was this congestive heart failure with splenomegaly and hepatomegaly? There was no evidence of heart failure, and one sees splenomegaly only in late cardiac cirrhosis. Was there an infiltration of metastatic carcinoma in the liver? I should say that the splenomegaly is against that. Did she have sarcoidosis or Hodgkin's lymphoma. I do not think we can rule that our completely.

Although the gastrointestinal series was negative, I do not believe that rules out esophageal varices. This picture of a woman, who had diarrhea a few months previously, a mild anemia and at least one positive stool guaiac reaction, I think, best fits a mild, functionally intact, early idiopathic portal cirrhosis, with mild portal hypertension. My diagnosis of the pigmentation is uncertain. I should say that the patient had hypertension, hypertensive and arteriosclrotic heart disease, portal crrhiosis and skin pigmentation of uncertain origin.

Dr. Perry J. Culver: I should like to disagree with the statement that the bromsulfalein retention of 8 per cent was normal. I think that with a mild degree of anemia 8 per cent probably represents an abnormal degree of retention. The glucose tolerance test of 182 mg. per

100 cc. at one hour is a little suggestive of diabetes. The pigmentation that is described might have been associated with cirrhosis. We have seen a number of cirrhotic patients who had pigmentation not unlike this.

Dr. Jacobson: Yes; I mean to mention that nonspecific pigmentation might go along with the cirrhosis.

Dr. Thomas Hall: I should like to mention a study from the medical service of the Peter Bent Brigham Hospital recently performed on the amount of hemochromatic pigment analyzed photometrically. Two male patients had hemochromatosis of long standing, with saturation of the iron-binding globulin and with testicular atrophy; they showed on photospectrometry of the skin a picture that was not characteristically different from that found in Addison's disease except for the fact that they had some castrate findings of low blood flow so w saw no characteristic blue in these 2 proved cases at all. The pigmentation, as far as we could tell clinically, was exactly analogous to that of Addison's disease, and as far as we could tell spectrophotometrically it merely had an additional component of decreased oxygen saturation and diminished blood flow to the skin. There was no specific pigment. This is in keeping with the description of the pathological findings as given by Jeghers, who showed a great melanin concentration in the corium and a variable amount of iron pigment.

Dr. Benjamin Castleman: In the skin of most patients with Addison's disease that we see microscopically we do not find iron, but we do find iron in the corium in cases of hemochromatosis. Microscopically, we can certainly tell the difference if it is positive even if you cannot with the useof the spectrophotometer.

Dr. Hall: I meant that clinically it is not possible to make a differentiation.

Dr. Castleman: Yes; it is quite possible that the iron seen in the skin of the patient with hemochromatosis has nothing to do with the clinical appearance of the skin itself. That may be due to the melanin.

Dr. Hall: Increased melanosis is due to the deposition of iron granules.

A Physician: Was the serum iron determined? Is there any report of hemochromatosis caused by oral administration of iron?

Dr. Jacobson: I have not run across any case in which oral ingestion of iron produced hemochromatosis. In a series of 23 cases of hemochromatosis, studied by Althausen and his co-workers in Australia, there was not a single instance of iron ingestion.

A Physician: Do people with prolonged ehmolytic anemia develop hemochromatosis?

Dr. Jacobson: They develop hemosiderin deposits, but they do not develop the full-blown picture of hemochromatosis.

Dr. Castleman: I think that is true. In hemosiderosis iron is found in the liver, primarily in the liver cells and the reticuloendothelial system, but not in the stroma of the portal spaces nor in the bile-duct epithelium such as is seen in hemochromatosis; it may be seen in other organs of the body such as the spleen and lymph nodes.

A Physician: Might this case not have been one of hemolytic anemia?

Dr. Jacobson: From the data available there is no evidence of hemolytic anemia in all these years.

Dr. Castleman : Dr. Jones, would you tell us about the patient up to the time of the biopsy?

Dr. Jones: When she came in, the first important thing was to see whether the anemia was due to bleeding from the gastrointestinal tract. In her home town, studies had been done that seemed to rule out such a possibility; those studies were confirmed here. There was no evidence of bleeding at any timc. The large liver was the obvious thing that had be explained. The pigment was not diagnostic, as Dr. Jacobson has pointed out, but it was certainly consistent with cirrhosis of the liver, with hemochromatosis and with some wasting disease that she did not have. Since we have had several cases of hemochromatosis in which skin biopsies have failed to show the iron-containing pigment, it seemed to me that a skin biopsy was not the best method of establishing the diagnosis. The quickest way to make a diagnosis was to look at a piece of liver, because I think we have never failed to make a diagnosis in cases of hemochromatosis by this means. The patient was properly prepared for biopsy. Th prothrombin time was normal; she was put on vitamin K a day or two before biopsy; and the biopsy was done without incident.

Dr. Jacobson: Had I know this was your patient, I should have said the biopsy was from the liver.

CLINICAL DIAGNOSIS

?Hemochromatosis.

DR. JACOBSON'S DIAGNOSIS

Portal cirrhosis, iodipathic.

Hypertensive and arteriosclerotic heart disease.

Skin pigmentation of uncertain origin.

ANATOMICAL DIAGNOSIS

Exogenous hemochromatosis due to iron ingestion.

PATHOLOGICAL DISCUSSION

Dr. Castleman: In this iron stain of the liver biopsy one can see the iron within the liver cells. If we saw this picture alone, we could not rule out merely hemosiderosis. The next slide shows a definite cirrhosis, with large amounts of connective tissue in the portal spaces; in this island, which is all a portal space, one sees all the iron deposited in the portal areas, in the stroma and within the bile-duct epithelium, which is the picture that the pathologist calls hemochromatosis rather than hemosiderosis.

We were much intrigued, as Dr. Jones and Dr. Jacobson were, with the idea that this might perhaps be an exogenous type of hemochromatosis. Exogenous hemochromatosis has been described after numerous transfusions but rarely if ever after oral ingestion of iron. Wallerstein and Robbins recently described a patient, similar to the patient under discussion, with congenital hemolytic anemia who received iron for fifteen years. Although their patient, also a woman, did have congenital hemolytic anemia, they believed that the amount of hemosiderin deposits could not be entirely due to hemolytic anemia, and since they estimated that the iron intake was great, they thought it must be due to the exogenous iron and that the factor of hemolysis might have aggravated the element of hemochromatosis. They also stated that perhaps there should not be a sharp differentiation between hemosiderosis and hemochromatosis — that perhaps hemosiderosis goes on to actual hemochromatosis. In their case the patient had diabetes and had hemosiderin deposits in many organs of the body, which would certainly be true of a case of hemochromatosis.

Dr. Jones: The serum iron in the case under discussion today was about 350 microgm. per 100 cc., but that was reported subsequently.

Dr. Jacobson: Was the menstruation normal?

Dr. Jones: As far as I know it was. Her nutrition had been good for years. There was nothing very abnormal in the picture except the long history of anemia, the iron administration and the large liver.

Her sister, one daughter and possibly a granddaughter had a queer anemia of many years' duration.

Dr. Jacobson: Was the patient of Mediterranean stock?

Dr. Jones: No.

Dr. Castleman: It is possible that there was a mild degree of hemolysis in this patient; certainly that in itself would not produce this picture in the liver. Perhaps the exogenous form of hemochromatosis was due to the combination of the two.

Dr. Jones: I have just received a note from her doctor, who writes as follows regarding her lifetime consumption of iron.

She was taken out of school at the age of sixteen for two years because of anemia and "incipient TB" (?). During this time she received 3 Blaud's pills a day. During her 3 pregnancies she always took iron, and she thinks the preparation and dose were the same. From the age of thirty-three to forty-two she was under the care of a physician who gave her iron pills and for a brief time injections of iron. I first saw her in 1932, when she was forty-four years old. For four years she took Blaud's pills, 6 a day for the first year and subsequently 3 pills a day as well as a crude liver extract. Four years later Feosol, 3 pills a day, was substituted for Blaud's pills. Iron therapy was discontinued six months before she was admitted to the hospital, and she was continued with liver extract and vitamin B12.

THE President's PAGE

ACTIVITIES OF THE COUNCIL

IN departing from the usual type of message on the President's Page, I wish to bring out some of the activities of the Council of the Arizona Medical Association. Each local society receives a copy of the proceedings, and I recommend its perusal for every member.

Saturday, June 18, 1955 — left for Phoenix in the morning and spent several hours with Mr. Robert Carpenter, your Executive Secretary in the State Medical offices. Again, I was deeply impressed with the excellent job that Mr. Carpenter is doing for our association.

After lunch with Mr. Carpenter, a conference with your past president, Dr. Oscar Thoeny, with regard to appointment of members to new committees, and to old committees — a brief visit with Dr. Donald Polson, President of the Blue Shield Corporation.

Sunday morning, June 19th, Council meeting at 10:00 A.M. — new members of the Council were welcomed. These included Dr. Paul Jarrett, Dr. Walter Brazie, Dr. Howard Lawrence, and Dr. Joseph Bank. A great deal of the morning was spent in helping the president appoint, or reappoint, members to the various committees. New committees were formed — The Air Polution Committee, Doctor's Investment and Retirement Committee, and the Medical-Legal Committee. These committees will be announced after formal acceptance from the appointees are received. Since these committees members comprise approximately 20% of the membership, they are truly democratic representatives of your association. I am continually surprised by the amount of work accomplished by these excellent enthusiastic doctors. Great credit and thanks are due them.

A short luncheon period and then the afternoon session of the Council Meeting. The convention report by Dr. Clarence Yount, State Treasurer, was heard. Three hundred and fifty-three (353) registrants were present at the meeting, as compared to a maximum previous of 335. Two hundred and fifty members attended the President's dinner dance. Thanks to Mr. Carpenter, the Scientific Assembly Committee, the many doctors and doctor's wives who made this meeting a success. A report from Dr. J. Hamer, your association delegate to the AMA, which will appear in detail in the Journal. Letters, resolutions, recommendations were taken up throughout the rest of the afternoon. Council meeting was concluded at approximately 4:15 P.M.

After the meeting we were very pleased to see our past President, Dr. Harry Southworth who happened to be at the hotel.

The return to Tucson with district counselers Dr. W. R. Manning, Dr. Royal Rudolph, and the Speaker of the House of Delegates, Dr. Lindsay Beaton was a hot 103° trip.

In closing, I would remind you that members of the various committees and your council, are your representatives. They are always available to hear about your problems and suggestions, either directly or through your local society.

HARRY E. THOMPSON, M. D.
PRESIDENT, ARIZONA MEDICAL ASSOCIATION

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the OURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

GUEST EDITORIAL

THE TUBERCULOSIS CONTROL ACT

THE passage of the Tuberculosis Control Act marks another milestone in the medical progress of our State. It now becomes our duty to assist in every way possible proper administration of the Act through our State and County Health Departments.

The passage of the Bill came as a surprise to everyone. Those of us who labored long and hard in promoting tuberculosis education can take some pride in the final favorable vote. However, before we bust too many buttons off our vests and before we buy a new hat, I should like to pass on to you some interesting information I have gathered in my travels.

Our legislators are now home and as our paths have crossed here and there I have asked the question — "What made you vote in favor of the Tuberculosis Control Bill?" The general answer has been to the effect that they were reluctant to return home to face their constituents without voting on the Bill. They admitted to great pressure from lay groups, notably the P.T.A. I also gathered that our law-making members have considerable respect for the medical profession's opinion and the endorsement of the Bill by our County and State Associations carried a lot of weight. In previous years we, as doctors, have not been unanimous in our actions regarding tuberculosis control.

In looking back I feel that effective tuberculosis education began with Governor Pyle's appointment of a fact-finding Board shortly after his election in 1950. As I recall, there were some forty members on this Board — people from all professions and from all parts of the State. They gathered a lot of facts and figures and by so doing spread a lot of information. In Pima County the project of our local Tuberculosis and Health Association for the past three years has been to educate the P.T.A. groups by talks and skintesting the school children. I am certain this effort paid off in requests to our legislators for tuberculosis control measures.

Let us now dig in and finish the job. There is much to do in getting Arizona in line with the other states in its tuberculosis morbidity and mortality.

O. J. Farness, M. D.
1535 N. Tucson Blvd.
Tucson, Arizona

NOTICE

The following articles were omitted from this issue of Arizona Medicine: Interesting Topics; Arizona Pharmaceutical Page; Woman's Auxiliary; The History of the Professional Building. These articles will appear in the August, 1955 issue.

Resolutions Accepted By House Of Delegates May 7, 1955

RESOLUTION

Introduced by Constitution & By-Laws Committee, Harry E. Thompson, M.D., Chairman.

Subject: Chapter II, Membership, Section 2(d), Service Members.

WHEREAS at the first regular session of the House of Delegates of The Arizona Medical Association, Inc., held in Chandler, Arizona, April 26, 1954, it was proposed by the Constitution & By-Laws Committee that an amendment to Chapter II, membership, Section 2(d), Service Members be adopted; and

WHEREAS the By-Laws of this Association require that notice of any and all proposed amendments shall have been given in written form to the members of the House of Delegates at least six weeks prior to said session; and

WHEREAS this procedure had not been followed necessitating delay in the effectiveness of such proposal; now therefore be it

RESOLVED that the House of Delegates of The Arizona Medical Association, Inc., hereby adopts the following amendment to its By-Laws:

CHAPTER II
MEMBERSHIP

Section 2(d) Service Members: After recommendation by a component society, the Council may elect as Service Members Doctors of Medicine who are regularly commissioned medical officers in the United States Army, United States Navy, United States Air Force, the United States Public Health Service, the permanent medical officers of the Veterans' Administration and Indian Service, and any full time permanent employee of other National, State, County or Municipal Government.

Rights: Those members serving temporarily in any of the above agencies shall have the same rights and privileges as active members and shall not be required to pay State Association dues. Those others not on temporary duty shall not have the right to vote and hold office and shall pay one-half State Association dues.

RESOLUTION

Introduced by Constitution & By-Laws Committee, Wilkins R. Manning, M.D., Chairman.

Subject: Chapter II — Membership, Section 2(a) Active Members — Right.

WHEREAS, at a called meeting of Council of The Arizona Medical Association, Inc., held in Phoenix, Arizona, October 3, 1954, it was proposed by the Constitution and By-Laws Committee than an amendment to Chapter II — Membership, Section 2(a), Active Members — Right, be made to provide that active members to be exempt from payment of dues during leave to engage in post-graduate medical training must have so departed within five (5) years following conferral of his or her doctor of medicine degree; otherwise they continue to pay dues as Active members; and

WHEREAS, following due deliberation Council determined to concur in the recommendation of its Constitution and By-Laws Committee as relates to this post-graduate medical training dues exemption; and

WHEREAS, Chapter XVI — Amendment, Section 1, provides that the By-Laws of this Association may be amended by the affirmative vote of a majority of the members of the House of Delegates present at any session called for that purpose, provided that notice of any and all proposed amendments shall have been given in written form to the members of the House of Delegates at least six weeks prior to said session; now therefore be it

RESOLVED, that the House of Delegates of The Arizona Medical Association, Inc., on recommendation and approval of its Council, hereby adopts the following amendment to its By-Laws, due notice having been given as provided:

CHAPTER II — Membership

SECTION 2

(a) Active Members

Rights: An active member shall have all of the rights and privileges of the Association as herein provided, EXCEPT THAT AN ACTIVE MEMBER WHO WITHIN FIVE (5) YEARS FROM THE TIME OF GRADUATION SHALL ENGAGE IN POST-GRADUATE TRAINING SHALL BE EXEMPT FROM PAYMENT OF STATE DUES.

RESOLUTION

Introduced by Constitution & By-Laws Committee, Wilkins R. Manning, M.D., Chairman.

Subject: Chapter IX — Funds, Expenses and Assessments, Section 7, Exemption of Dues

WHEREAS, at a called meeting of Council of The Arizona Medical Association, Inc., held in Phoenix, Arizona, October 3, 1954, it was proposed by the Constitution and By-Laws Committee that an amendment to Chapter IX — Funds, Expenses and Assessments be made to provide for dues exemption clarification by adding a new Section to be numbered seven (7); and

WHEREAS, following due deliberation Council determined to concur in the recommendation of its Constitution and By-Laws Committee as relates to such dues exemption clarification; and

WHEREAS, Chapter XVI — Amendment, Section I, provides that the By-Laws of this Association may be amended by the affirmative vote of a majority of the members of the House of Delegates present at any session called for that purpose, provided that notice of any and all proposed amendments shall have been given in written form to the members of the House of Delegates at least six weeks prior to said session; now therefore be it

RESOLVED that the House of Delegates of The Arizona Medical Association, Inc., on recommendation and approval of its Council, hereby adopts the following amendment to its By-Laws, due notice having been given as provided:

CHAPTER IX — FUNDS, EXPENSES AND ASSESSMENTS

SECTION 7 — EXEMPTION OF DUES — MEMBERS EXEMPT FROM THE PAYMENT OF DUES AND ASSESSMENTS SHALL INCLUDE

THOSE (a) BY REASON OF PHYSICAL DISABILITY, ILLNESS OR FINANCIAL HARDSHIP; (b) ANY MEMBER 70 YEARS OF AGE; (c) SERVICE MEMBERS ON TEMPORARY DUTY; (d) 50 YEAR CLUB MEMBERS; (e) ASSOCIATE MEMBERS; (f) AFFILIATE MEMBERS; AND (g) HONORARY MEMBERS. A MEMBER MUST REQUEST SUCH EXEMPTION AND BE APPROVED THEREFORE BY THE COMPONENT COUNTY MEDICAL SOCIETY AND THE COUNCIL OF THE ARIZONA MEDICAL ASSOCIATION, INC. NON-PAYMNT OF DUES AND ASSESSMENTS SHALL BECOME EFFECTIVE ON JANUARY FIRST OF THE YEAR FOLLOWING THE GRANTING OF SUCH EXEMPTION.

RESOLUTION

Introduced by Constitution & By-Laws Committee, Wilkins R. Manning, M.D., Chairman.

Subject: Chapter III — Component Societies, Section 5.

WHEREAS, Chapter XVI — Amendments, Section 1, provides that the By-Laws of this Association may be amended by the affirmative vote of a majority of the members of the House of Delegates present at any session called for that purpose, provided that notice of any and all proposed amendments shall have been given in written form to the members of the House of Delegates at least six weeks prior to said session; now therefore be it

RESOLVED, that the House of Delegate of The Arizona Medical Association, Inc., on recommendation and approval of its Council, hereby adopts the following amendment to its By-Laws, due notice having been given as provided:

CHAPTER III — COMPONENT SOCIETIES

Section 5. Any physician who may feel aggrieved by action of the county or district society in which he resides in refusing him membership, or in suspending, censuring or expelling him, shall have the right to appeal to the Council; and if he so desires to the Judicial Council of the American Medical Association. ANY COUNTY OR DISTRICT SOCIETY WHO IS A PARTY TO SUCH APPEAL TO THE COUNCIL OF THE ARIZONA MEDICAL ASSOCIATION MAY LIKEWISE APPEAL FROM A DECISION OF THE COUNCIL OF THE ARIZONA MEDICAL ASSOCIATION TO THE JUDICIAL COUNCIL OF THE AMERICAN MEDICAL ASSOCIATION. The decision of the latter shall be final. In hearing appeals the Council may admit such oral or written evidence as in its judgment will most fairly present the facts, but in the case of every appeal the Council as a board and as individuals shall first make effort at conciliation and compromise.

RESOLUTION

Introduced by Chairman of Council.

Subject: Professional Board.

WHEREAS, the seminar program was held in one circuit this year and proved unsuccessful; and

WHEREAS, it is presently controversial whether or not the State Department of Health will be in position to resume financial participation in the seminars; and

WHEREAS, it has been policy to charge a registration fee for seminars; now therefore be it

RESOLVED that the Professional Board of this Association conduct its seminars in two or more circuits, charging ten dollars ($10.00) registration fee for attendance at said seminars; and be it further

RESOLVED that the Professional Board be appropriated $2,500 for the fiscal year 1955-56 for the purpose of carrying on its functions.

RESOLUTION

Introduced by Chairman of Council.

Subject: New Hoover Commission.

WHEREAS, The Arizona Medical Association, Inc. has always fostered the concept of better government at a better price for all Americans; and

WHEREAS, The Arizona Medical Association. Inc. has consistently endorsed policies established to insure efficient administration of the Federal Government and to provide maximum saving to the taxpayer; and

WHEREAS, the bipartisan First Hoover Commission, which was unanimously created by Congress in 1947, brought about a number of significant improvements in the administration of our Federal Government; and

WHEREAS, a bipartisan New Hoover Commission was unanimously created by Congress in 1953 with the major purpose of continuing the search for new ways and means of saving money for the taxpayer; and

WHEREAS, this New Hoover Commission is preparing reports for submission to the Congress with recommendations to provide more orderly and responsible government at less cost; now therefore be it

RESOLVED by The Arizona Medical Association, Inc., that we reaffirm our support of such actions in the public interest which are designed to bring about greater efficiency and dollar savings in government operations; and be it

RESOLVED that The Arizona Medical Association, Inc., urges the President and the Congress to take appropriate steps to carry out the recommendation of the New Hoover Commission; and be it further

RESOLVED that The Arizona Medical Association, Inc. alert the members of this organization to the need on a patriotic, non-political basis for public understanding, cooperation and action in support of the recommendations of the New Hoover Commission; and be it further

RESOLVED that the members and officials of The Arizona Medical Association, Inc., individually and by cooperating with the Citizens Committee for the Hoover Report endorse and work toward achieving the vital goal of better, more efficient and less expensive government for all the peoples of our Nation and be it further

RESOLVED that copies of this resolution be sent to appropriate legislative representatives in Washington, D.C., and to the national headquarters

number of full-time under-graduate medical students enrolled in the school. These, too, are for budget support without restriction.

Class "C" Grants: Varrying sums to meet special teaching needs, financial emergencies and other problems.

6) The breakdown of the source of funds received during 1954 by AMEF is as follows:

Physicians: $507,811.57. Number of contributors 22,195.

Organizations: $607,357.05. Number of organizations contributing, 748.

Laymen: $811.00. Number of contributors, 53.

Interest on securities: $3,577.46.

7) It is interesting to note that the Woman's Auxiliaries to organized medicine in 1954 contributed $45,031.59 — no small item. Almost all of this money was obtained through projects and not by direct contributions by auxiliary members.

8) In addition to the efforts of the NFME and the AMEF, about 1½ million dollars was contributed during 1954 by about 35,000 physicians directly to medical schools or through alumni funds. Not all of this money went for the support of budget deficits in medical schools, since some of it was earmarked for special projects, research, etc.; and some of it was apportioned to medical schools, along with other branches of higher education according to the policy of each Alumni Fund. Every dollar contributed through the AMEF and earmarked for a specific medical school reached that school in addition to the regular grants.

In 1954 Arizona physicians placed Number One on the Honor Roll of the top ten states in participation in AMEF. In 1953 Arizona's physician per cent participations was 1.41, while in 1954 the per cent was 87.74. With 752 physicians contributors in 1954 for a total of $8,049.17, Arizona ranked sixteenth in a list of 51 (48 states, District of Columbia, Alaska and Hawaii), in total dollars contributed, and sixth in the total number of physicians contributing through AMEF. The figure 752 is obtained by adding to the 723 members of the Arizona Medical Association who participated equally on the $10.00 per member contribution voted by their House of Delegates in April, 1954, 33 contributions made by Arizona doctors in addition to the lump sum given by the Association. The Woman's Auxiliary to the Arizona Medical Association contributed $229.17 through AMEF, and we compliment the ladies on their good efforts.

In average amount given through AMEF per contributor, Arizona placed fifty-first in the list of fifty-one, with $13.31 per contributor. The five leading states in this breakdown are California $236.00, Arkansas $227.00, Nebraska $125.00, and Nevada and New Jersey with $70.00 each.

It might be interesting to the membership of the Arizona Medical Association to enumerate the following facts:

The grade averages of the 7,449 premedical graduates admitted to medical schools in the freshman class September, 1954 were as follows:

1.0 — 1.999	(A) — 21%
2.0 — 2.999	(B) — 69%
3.0 or lower	(C) — 10%

It will be seen from these figures that the familiar cry that a student must have "A" or better than "2" average to be accepted by a medical school is not factual.

The problem of training more students annually in the Art and Science of Medicine poses a problem far different than that encountered in other fields, such as business, law, etc. It is not much of a problem to increase the size of a lecture class, but to increase the enrollment in a laboratory or in a clinical hospital teaching group is entirely different. It costs about $10,000 for the education of each medical student during a four-year period. The student or his parents pay only about 1/5 of this amount in tuition fees.

At the present time five completely new medical schools are in the process of development. There are currently 74 accredited four-year schools of medicine, and 6 two-year schools of basic medical sciences. It is planned that by 1960 there will be 85 four-year schools enrolling about 30,000 medical students and graduating between 7,300 and 7,400 doctors annually. Someone is going to have to pay the bill for the cost of this expansion in medical education. The money must come either from individual or private sources or out of the public or federal treasury by taxation. Certainly, American physicians in general would fear the health of American medicine were federal controls which invariably accompany federal subsidies forced upon our medical schools. Each doctor of medicine owes a debt, while not legal, yet none-the-less moral, for the 80% of his medical education that he did not pay for. May I refresh your memories by quoting from the first paragraph of the "Oath of Hippocrates":

> " — I will look upon him who shall have taught me this Art even as one of my parents. I will share my substance with him, and I will supply his necessities, if he be in need. I will regard his offspring even as my own brethren, and I will teach them this Art, if they would learn it, without fee or covenant. I will impart this Art, by precept, by lecture and by every mode of teaching not only to my own sons but

Year	Number of Applicants for admission to Medical Schools	Total number of Applicants	Number Admitted	Ratio
1947	18,829	56,279	6,487	1 to 2.9
1948	24,000 plus	81,000	6,650	1 to 3.6
1949	24,434	88,000	7,042	1 to 3.45
1954	14,678	48,556	7,449	1 to 1.97

to the sons of him who has taught me, and to disciples bound by covenant and oath, according to the Law of Medicine —"

What will we, the members of the Arizona Medical Association do in 1955 to aid in the medical education of our young men and women? Commendation is due you for your excellent efforts as an Association in 1954. In addition some doctors, usually known only to themselves, contributed sums for educational purposes through their Alumni Funds. There should be no abatement of these efforts. But the concerted actions of the organizations of medicine and of AMEF must go on. How will Arizona accomplish her part in 1955? Certainly we cannot go on indefinitely by digging into our Association's reserves to make annual contributions. Additional funds must be given by each and every doctor. Some have done their share and more. Others have shirked their duty to medical education. Each member of our Association knows in his heart into which group his name falls.

As your chairman of the AMEF Committee for Arizona, I am prompted to make the following recommendations to the House of Delegates:

(1) That the dues of each member of the Arizona Medical Association be increased by $10 per annum, and that the $10 increase be contributed to medical education through the AMEF until further action by the House of Delegates.

(2) That relief from the $10 increase in dues be granted to any member who has a justified plea of hardship which need be substantiated only by that member's letter to the Executive Secretary of Arizona Medical Association, and that the releved member's name be held in strictest confidence.

(3) That all members of the Arizona Medical Association who find themselves financially able to do so, and many there must be, be urged to make such additional contributions as they can either (a) through the AMEF either earmarked for their school of choice, or unrestricted, (b) or through their respective Alumni Funds.

H. W. Kohl, M.D.

Chairman of the Committee for AMEF in Arizona

AMERICAN MEDICAL EDUCATION FOUNDATION REPORT OF CONDITION

December 31, 1954

THE NATIONAL FUND FOR MEDICAL EDUCATION	
Amount distributed to medical schools Jan. 1, 1951 to date	$6,941,057.58
Total income for National Fund Jan. 1 to Dec. 31, 1954	2,688,418.51*
Contributions received by National Fund Jan. 1 to Dec. 31, 1954	1,586,840.20
Grants disbursed to medical schools July 1954	2,176,904.71
Balance: National Fund for Medical Education	
Funds available for distribution	763,377.24
AMERICAN MEDICAL EDUCATION FOUNDATION	
Raised and transferred to National Fund Jan. 1, 1951 to date	3,563,883.09
Amount transferred to National Fund-Income from	
June 1953 to June 1954	1,101,578.31
Total raised by Foundation-Income from Jan. 1 to Dec. 31, 1954	1,182,627.08
Balance: American Medical Education Foundation	
Funds available for distribution	360,386.78
COMBINED TOTALS OF THE NATIONAL FUND FOR MEDICAL EDUCATION & THE AMER. MED. EDUCATION FOUNDATION	
Total raised	7,964,821.60**
Distributed	6,941,057.58
Balance available for distribution	1,023,764.02

*Includes contribution of $1,101,578.31 from AMEF.

**NF raised $4,040,551.73 and AMEF raised $3,924,269.87 of this figure.

AMERICAN MEDICAL EDUCATION FOUNDATION

Woman's Auxiliaries

Complete total received from Woman's Auxiliaries January 1 to December 31, 1952	$17,116.50	61
Complete total received from Woman's Auxiliaries January 1 to December 31, 1953	34,704.04	472
Amount received from Woman's Auxiliaries January 1 to December 31, 1954	34,453.24	535
Amount received from members of the Auxiliaries January 1 to December 31, 1954	267.00	16
Memorial contributions received from Auxiliaries and members: January 1 to December 31, 1954	10,311.35	149
Complete total received from Woman's Auxiliaries January 1 to December 31, 1954	45,031.59	700

of the Citizens Committee for the Hoover Report, 441 Lexington Avenue, New York 17, New York.

RESOLUTION

Introduced by Chairman of Council.
Subject: Woman's Auxiliary.

WHEREAS, the Woman's Auxiliary is successfully operating a Student Nurse Loan Fund; and

WHEREAS, they are in need of additional funds; now therefore be it

RESOLVED that The Arizona Medical Association, Inc., appropriate to the Woman's Auxiliary of The Arizona Medical Association, Inc., $800, such amount to be above and beyond the regular appropriation to be included in the annual budget, for the purpose of the Student Nurse Loan Fund.

RESOLUTION

Introduced by Insurance Investigating Committee, Jesse D. Hamer, M.D., Chairman.

Subject: Fee Schedule for Commercial Insurance Carriers.

WHEREAS, Council of The Arizona Medical Association, Inc., has appointed a special committee, on invitation of the Arizona Association of Health and Accident Underwriters, to confer with them on matters of mutual interest, and

WHEREAS, the Chairman of this special committee has informed this House verbally of the subjects discussed at a preliminary exploratory meeting between the two groups, held recently, and

WHEREAS, one of the subjects proposed by the Health and Accident Underwriters was an invitation to the medical profession of this state to attempt the development of a fee schedule especially adaptable to the private insurance carriers and their business operations; now, therefore be it

RESOLVED that it is the desire of the Council of The Arizona Medical Association, Inc., and its Special Insurance Investigating Committee that this House of Delegates at this session express itself on this important matter, so that future liaison mechanisms established with the private insurance group be based on the specific recommendations of this House of Delegates.

Annual Reports As Given At Annual Meeting May, 1955

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE GRIEVANCE COMMITTEE

Your Grievance Committee is pleased to report to the Council and the House of Delegate that it was not necessary for the Committee to convene this year, and that only three complains were registered.

The Committee this year was composed of Edward M. Hayden, M.D., Chairman (Tucson), Preston T. Brown, M.D. (Phoenix), Hilary D. Ketcherside, M.D., (Phoenix), Robert E. Hastings, M.D. (Tucson), Otto E. Utzinger, M.D. (Scottsdale), Charles N. Sarlin, M.D. (Tucson), Royal W. Rudolph, M.D.(Tucson); and by virtue of office Oscar W. Thoeny, M.D., President (Phoenix), and D. W. Melick, M.D., Secretary (Phoenix).

Of the three complaints this year coming from less populous counties, two involved alleged overcharges and one dissatisfaction of treatment.

Case No. 44: Complaint of patient who, following an apparent lapse into a state of unconsciousness and emergency transport by ambulance to a local hospital, expressed dissatisfaction of treatment rendered, especially that of a spinal fluid examination performed allegedly without his consent. Investigation revealed such examination considered necessary in the proper diagnosis of condition and to rule out possible brain hemorrhage which procedure was not objected to; and that fees charged for services performed found to be in accord with standard practice without evidence of overcharge. No basis for complaint indicated. Case dismissed.

Case No. 45: Complaint was filed by an official of a union in the name of a patient, apparently without the knowledge or desire of the patient, against the family doctor and the hospital for alleged overcharges. Patient carried indemnity type of health and hospital insurance through a union, which paid for only a portion of surgical and hospital bills. The patient told his doctor his only criticism was that insurance coverage was not adequate. Case involved two surgical procedures for perforated abdominal viscus with necessarily greater surgical, nursing and hospital care. Patient subsequently was apparently urged to sign a separate complaint, later waivered and withdrew complaint. No action by Committee was necessary, and case was closed.

Case No. 46: Complainant is wife of patient who had emergency appendectomy in 1948 and did not register complaint with our Committee until December 1954, at which time legal steps had been started to recover the unpaid balance. Physician had made a counter offer to settle for $25 more than complainant was willing to pay, and offer was rejected. This case is still pending at the time this report is submitted.

While this year has been most gratifying to the Committee, it is felt that we should continue to be mindful of the three recommendations made by our predecessor Committee; namely, that we 1) avoid loose talk concerning our colleages and our patients, 2) place more individual effort on physician-patient relationship by keeping the patient informed as to the reasons for specific types of treatment and discuss fees before charges are made whenever possible, and 3) maintain good hospital and office records which will clearly indicate and justify the treatments and charges.

Respectfully submitted

Edward M. Hayden, M.D.
Chairman

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE DELEGATE TO THE AMA

Since the last meeting of the House of Delegates of the Arizona Medical Association, Inc., your delegate has attended all sessions of the House of Delegates of the American Medical Association, meeting in June, 1954 in San Francisco, California, and at the Clinical Session held in December, 1954 in Miami, Florida.

Immediately following each of these two meetings, a summary of the important matters which were presented to the national House of Delegates, together with official actions taken, was prepared and published in our official journal as early as space permitted. In that manner, our membership was appraised of the actions taken by the national body on important subjects, without waiting for our own annual meeting.

Your delegate is cognizant of the many important subjects which appear on the floor of the national House of Delegates whenever official action is taken by our policy making body. It is hoped that recognition will be granted to many of the important subjects before American Medicine today so that our House of Delegates will consider them by appropriate action, through resolution, and thus, through the delegate, express to the national body the feeling of our membership on these matters.

No further report on the actions taken by the A.M.A. House of Delegates is submitted at this time, since a resume of each meeting has already been published in Arizona Medicine.

Respectfully submitted
Jesse D. Hamer, M.D.
Delegate to A.M.A.

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE COMMITTEE FOR AMERICAN EDUCATIONAL FOUNDATION

The Chairman of the Arizona Committee for the American Medical Education Foundation attended the annual conference at the Sheraton Hotel, Chicago, on January 23, 1955. Speakers were Dr. Walter B. Martin, member of the Board of Directors, AMEF, and President of the American Medical Association; Dr. Edwin S. Hamilton, member of the Board of Directors, AMEF, and Trustee of the AMA; Mrs. George Turner, President of the Woman's Auxiliary to the AMA; Mrs. Frank Gastineau, National Chairman AMEF Committee of the Woman's Auxiliary to the AMA; and others. Representatives from Utah, Illinois, Connecticut and Ohio discussed methods used in those states for obtaining funds for the support of Medical Education in the United States. The overall financial problem facing medical schools today was clearly defined. It appears to be an ever-continuing problem with little evidence that the burden will lessen in the near future. The attached "Report of Condition" is self-explanatory and deserves the attention of each member of organized medicine and of the auxiliaries to organized medicine. Some of the included facts need further emphasis by repetition:

1) In the years 1951-54 inclusive, the AMEF has raised and transferred to the National Fund for Medical Education the sum of $3,563,883.09. In 1954 the amount raised by the AMEF was $1,182,-627.08.

2) The total money distributed by the National Fund to medical schools during the years 1951-54 inclusive was $6,941,057.58. The combined efforts of the NFME and the AMEF for the years 1951-54 produced $7,964,821.60, and the balance available for distribution on December 31, 1954 was $1,023,764.02.

3) Of the total amount transferred to the National Fund by the AMEF during the period 1951-1954, the American Medical Association sponsored and continued the Foundation's fund-raising program by an annual gift of $500,000. However, at the Clinical Session in Miami, December 1954, the trustees announced that the grant for the coming year would be reduced to $100,000. The reduction of the AMA's gift does not indicate a loss of interest in this program by the Association. but rather, it is an indication of the strong faith the Association has in the individual and his local medical society. The AMA believes, and rightly so, that the bulk of money raised should come from the individual and his local society. It was on this principle that the AMA objected to federal subsidization of the medical school deficits four years ago. Therefore, it is vitally important that every physician in the United States be informed of the need for funds and his support be enlisted without delay.

Regardless of the method we use to raise funds at the state and/or county levels, the end result of our efforts will be measured in the number of dollars raised during the coming year. Congress will continue to watch closely the results of the medical profession's efforts to lend support to the nation's medical schools, and, undoubtedly, in the event of failure or indication of little interest, it will take legislative action that would have far-reaching effects on the whole of medicine in the United States, starting with our medical schools and reaching ultimately into the office of every practicing physician.

4) It is well to re-emphasize here that every penny contributed to Medical Education through the AMEF is untouched for administration expenses, 100% of the fund going to the medical schools. All administrative funds, amounting to over $100,000 annually, are supplied by the AMA treasury.

5) Money is distributed to the medical schools in conformance to the Grants Policy as follows:

Class "A" Grants: A uniform sum, heretofore $15,000 annually, to accredited four-year medical schools without restriction for budget support. A smaller uniform sum $7,500, to accredited two-year basic medical science schools.

Class "B" Grants: Annual awards based on the

Note: During 1954, contributions from Auxiliaries were recorded from January 1, 1954 through August 31, 1954. Auxiliaries will maintain records on contributions raised by their members for the Foundation during the 1954-55 Auxiliary season which ends in June, 1955.

AMERICAN MEDICAL EDUCATION FOUNDATION

January 1 — December 31, 1954

Physicians	$507,881.5	22,195
Organizations	670,357.05	748
Laymen	811,00	53
Securities	3,577.46	
Total	$1,182,627.08	22,996

STATE LIST OF CONTRIBUTORS

Jan. 1 to Dec. 31, 1954

State	Number	Amount	State	Number	Amount
Alabama	141	$ 4,984.25	New Jersey	86	3,959.71
Arizona	752	8,049.17	New Mexico	36	1,991.42
Arkansas	42	9,552,35	New York	2,974	39,009.31
California	471	124,949.63	North Carolina	58	3,082.50
Colorado	419	12,333.50	North Dakota	60	2,600.00
Connecticut	381	12,862.50	Ohio	656	25,338.50
Delaware	88	3,760.00	Oklahoma	20	833.61
District of Columbia	82	3,822.00	Oregon	77	3,877.00
Florida	54	3,184.00	Pennsylvania	1,058	37,688.68
Georgia	47	2,506.00	Rhode Island	8	470.00
Idaho	15	482.50	South Carolina	24	470.00
Illinois	8,837	185,095.68	South Dakota	136	5,815.50
Indiana	1,140	40,323.74	Tennessee	24	1,420.64
Iowa	2,236	12,024.20	Texas	381	12,778.54
Kansas	64	2,995.00	Utah	535	11,090.00
Kentucky	31	1,427.00	Vermont	142	3,280.00
Louisiana	51	2,414.58	Virginia	207	9,469.19
Maine	26	990.00	Washington	195	9,277.80
Maryland	80	3,772.00	West Virginia	52	2,263.00
Massachusetts	103	5,862.59	Wisconsine	145	4,661.00
Michigan	119	6,922.00	Wyoming	114	3,722.00
Minnesota	138	5,890.38	American Med. Assn.	1	500,000.00
Mississippi	111	3,088.00	FOREIGN		
Missouri	157	5,074.40	Alska	2	110.00
Montana	51	2,355.25	Hawaii	17	855.00
Nebraska	194	26,252.00		22,996	$1,179,049.62
Nevada	16	1,145.00	Interest on Securities		3,577.46
New Hampshire	142	2,888.50			$1,182,627.08

AWARDS OF MERIT — 1954

AMERICAN MEDICAL EDUCATION FOUNDATION

AMERICAN MEDICAL ASSOCIATION
Chicago, Illinois

AMERICAN COLLEGE OF RADIOLOGY
Chicago, Illinois

AMER. COLLEGE OF ANESTHESIOLOGISTS
Chicago, Illinois

ARIZONA MEDICAL ASSOCIATION
Phoenix, Arizona

CALIFORNIA MEDIAL ASSOCIATION
Los ngeles, California

IOWA STATE MEDICAL SOCIETY
BALDRIDGE-BEYE MEMORIAL
Des Moines, Iowa

MASSACHUSETTS MEDICAL SOCIETY
Boston, Massachusetts

MEDICAL SERVICE FOUNDATION OF MAHOING COUNTY
Youngstown, Ohio

UTAH STATE MEDICAL ASSOCIATION
Salt Lake City, Utah

MEDICAL SOCIETY OF VIRGINIA
Richmond, Virginia

Birmingham, Alabama

WOMAN'S AUX. TO ALAMEDA COUNTY MEDICAL SOCIETY
San Marino, California

WOMAN'S AUX. TO THE AMERN MED. ASSN.
Little Rock, Arkansas

WOMAN'S ANX. TO CALIF. MEDICAL ASSN.
San Marino, California

WOMAN'S AUX. TO ESSEX COUNTY MED. SOC.
Newark, New Jersey

WOMAN'S AUX. TO LOS ANGELES COUNTY MEDICAL SOCIETY
Los Angeles, California

WOMAN'S AUX. TO INDIANAPOLIS MED. SOC.
Indianapolis, Indiana

WOMAN'S AUX. TO RAPIDES MEDICAL SOCIETY
Alexandria, Louisiana

SOUTHERN MEDICAL ASSOCIATION

W. W. BAUER, M.D.
Chicago, Illinois

WILLIAM BOLTON, M.D.
Chicago, Illinois

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Omaha, Nebraska

J. P. COGLEY, M.D.
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Omaha, Nebraska

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Omaha, Nebraska

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Brooklyn, New York

G. M. RICHARDS. M.D.
Ione, Washington

STUART A. WALLACE, M.D.
Houston, Texas

AMERICAN MEDICAL EDUCATION FOUNDATION

State percentage figures of contributors to the Foundation during 1953 and 1954:

State	No. Drs. in State	% - 1953	% - 1954	State	No. Drs. in State	% - 1953	% - 1954
Arkansas	1,738	2.24	2.42	Nevada	225	9.33	7.11
Alabama	2,314	1.30	6.06	New Hampshire	781	28.30	18.18
Arizona	920	1.41	81.74	New Jersey	6,616	.91	1.30
California	18,039	1.22	2.61	New Mexico	579	6.56	6.22
Colorado	2,460	21.26	17.03	New York	31,484	9.91	9.45
Connecticut	3,447	7.08	11.05	North Carolina	3,485	1.03	1.66
Deleware	457	27.13	19.26	North Dakota	507	7.10	11.83
Dist. of Colum.	3,585	1.23	2.29	Ohio	10,203	5.31	6.43
Florida	3,382	1.36	1.60	Oklahoma	2,282	.53	.88
Georgia	3,254	2.61	1.44	Oregon	1,921	3.59	4.01
Idaho	506	.99	2.96	Pennsylvania	14,794	7.21	7.15
Illinois	13,211	64.13	66.90	Rhode Island	1,047	.38	.76.
Indiana	4,398	18.35	25.92	South Carolina	1,583	.63	1.52
Iowa	2,941	4.76	76.03	South Dakota	532	25.00	25.56
Kansas	2,227	2.42	2.87	Tennessee	3,364	1.01	.71
Kentucky	2,656	1.09	1.17	Texas	8,424	2.40	4.52
Louisiana	3,174	1.23	1.60	Utah	878	3.53	60.93
Maine	994	2.81	2.62	Vermont	585	21.88	24.27
Maryland	3,937	3.23	2.03	Virginia	3,492	5.33	5.93
Massachusetts	9,121	1.17	1.13	Washington	2,971	5.52	6.56
Michigan	7,21	1.80	1.64	West Virginia	1,824	2.41	2.85
Minnesota	4,288	5.18	3.22	Wisconsin	3,838	1.12	3.78
Mississippi	1,540	5.19	7.21	Wyoming	264	25.00	45.18
Missouri	5,197	2.44	3.02	Alaska	69		2.90
Montana	598	5.18	8.53	Hawaii	489		3.48
Nebraskas	1,661	9.81	11.68		204,995	8.89	11.22%

AMERICAN MEDICAL EDUCATION FOUNDATION

HONOR ROLL OF STATES - 1954

In Participation

ARIZONA
IOWA
ILLINOIS
UTAH
WYOMING
INDIANA
SOUTH DAKOTA
VERMONT
DELAWARE
NEW HAMPSHIRE
COLORADO
NORTH DAKOTA
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ILLINOIS
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NEW YORK
PENNSYLVANIA
NEBRASKA
OHIO
CONNECTICUT
TEXAS
COLORADO
IOWA
UTAH

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE PRESIDENT-ELECT OF WOMAN'S AUXILIARY TO THE ARIZONA MEDICAL ASSOCIATION

As incoming president of the Woman's Auxiliary to the Arizona Medical Association, I am submitting the proposed program for that group for 1955-56.

Nurse recruitment, mental health, civil defense, and aid to the American Medical Education Fund will be emphasized in this year's program.

The nurse recruitment chairman will continue to work with the Arizona State Nurses Association. These two groups have formed a Careers for Nursing Committee working closely together in recruitment of nurses from all parts of the state.

Cooperation of our Mental Health Committee with the State Mental Health Association will be one of our newer aims. Although this is a new committee, much interest has been shown among the membership.

We will continue to work with the State Civil Defense Chairman in educating not only our own members and families, but the community as well.

All auxiliary members will be informed and urged to contribute to the AMEF. A dollar per member is our minimum quota.

The Student Nurse Loan Fund as set will allow a loan of $400 to each student selected. During the past year, seven girls were given loans in this program. Some only needed partial loans.

A newsletter will be sent to every doctor's wife throughout the state. This, we hope, will stimulate interest for everyone to participate in community health projects, whether a member of an organized auxiliary or not.

Pushing the sales of "Today's Health", the AMA's official health magazine, will greatly assist us in health education in our local communities.

As President, I will be an official delegate to the AMA convention at Atlantic City in June. In November, the President Elect and I will represent Arizona at the National President and President-Elect Conference in Chicago. These meetings will aid me in interpreting the aims and policies of the national auxiliary to the local groups. During my term of office I will also visit each organized county auxiliary in the state and report on the Chicago conference.

Each auxiliary member will be urged to become better informed about state and national legislation pertaining to the good of the medical profession.

The Board of Directors of the Woman's Auxiliary to the Arizona Medical Society has authorized me to respectfully request that you underwrite the above proposed program with a grant of at least One Thusand Dollars ($1,000).

We wish to assure you of our continued and increasing interest in the Association and to thank you for your generous support.

Irene R. Hewitt (Mrs. Roy)
President-Elect

ESTIMATED INCOME 1955-56

Balance on hand, March 1st	$ 650.00
State and National dues	850.00
Arizona Medical Association	1,000.00
Student Nurse Loan (from savings)	1,200.00
TOTAL	$3,00.00

ESTIMATED EXPENDITURES

National Dues	$ 425.00
President Expense Fund	400.00
President-Elect Fund	300.00
Organization and Membership	15.00
Newsletter (includ. stamps & printing)	100.00
Public Relations	25.00
Nurse Recruitment	200.00
Legislation	50.00
Student Nurse Loan (from savings)	1,200.00
Student Nurse Loan (from savings)	600.00
Student Nurse Loan Committee Expense Fund	50.00
Convention	100.00
Printing & Supplies	100.00
Postage, Telephone & Telegraph	50.00
Mental Health	25.00
AMEF	10.00
Contingent	50.00
TOTAL	$3,700.00

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE PRESIDENT OF WOMAN'S AUXILIARY TO ARIZONA MEDICAL ASSOCIATION

This is a general report of the activities of the Women's Auxiliary to the Arizona Medical Association for 1954-1955. No definite figures can be given at this date since yearly reports do not reach me until March 15. When I send in my annual report to the National Auxiliary I will also send a copy to your group.

My first duty as President was to serve as official delegate to the 31st Annual Convention of the Woman's Auxiliary to the American Medical Association held in San Francisco in June, 1954. I gave the report for Arizona and wrote about the meeting for Arizona Medicine. At the San Francisco meeting, Mrs. George Turner, National President, set the theme for the year, "Leadership in Community Health".

In Arizona, our five organized counties have carried on health services in their local communities through their local auxiliaries. The organization chairman has compiled and sent out news letters to all doctors' wives in the state hoping to interest docetors' wives, even in the remote sections of our state so that they will be leaders in health in their communities. Organization of these scattered groups does not seem feasible but we do urge them to know our program and to attend conventions where we will have a school of instruction for all State Officers and Chairmen.

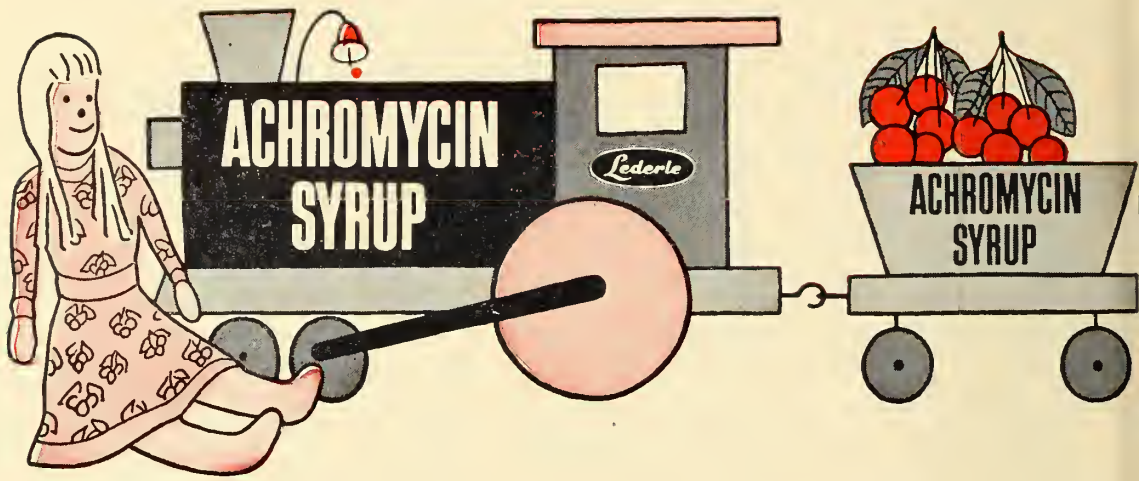
In November, I attended the Eleventh Annual Conference of State Presidents, Presidents-Elect and National Committee Chairmen. I participated on the Mental Health panel and gave a 3-minute talk on Juvenile Delinquency.

Mrs. Roy Hewitt, President-Elect and I, have

PLEASANT CHERRY FLAVOR!

125 MG. PER 5 CC. TEASPOONFUL! NO REFRIGERATION!

AQUEOUS—NO OIL,



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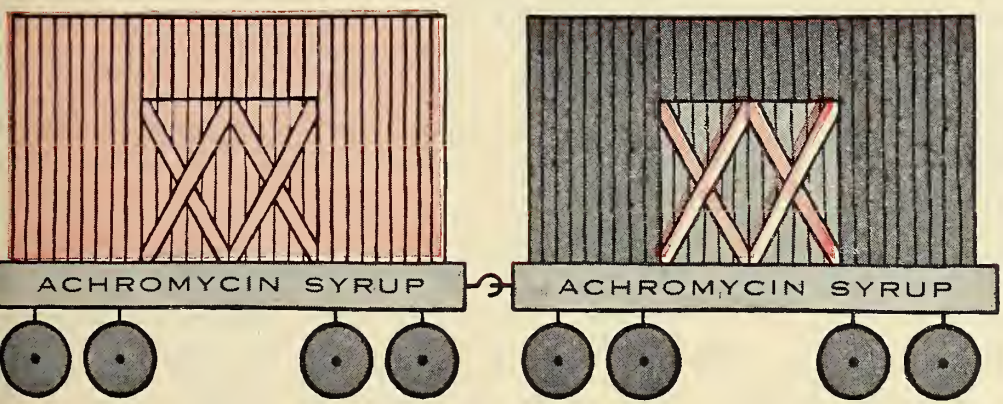
PEDIATRIC DROPS (Cherry Flavor): 100 mg. per cc. (approx. 5 mg. per drop)

ORAL SUSPENSION (Cherry Flavor): 250 mg. per teaspoonful (5 cc.)

SPERSOIDS* Dispersible Powder (Chocolate Flavor): 50 mg. per rounded teaspoonful (3 Gm.)

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ACHROMYCIN • broad-spectrum • rapid diffusion • prompt control of infection • well tolerated • effective against Gram-positive and Gram-negative bacteria, rickettsiae, and certain viruses and protozoa.

Today's most widely prescribed broad-spectrum antibiotic, tested and accepted by foremost medical authorities, produced and marketed by Lederle.

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visited the organized counties. This personal contact has done much to bring greater emphasis on the Auxiliary as a State and National organization. Legislative problems, sale of "To-Day's Health", AMEF, Nurse Recruitment, Civil Defense, Mental Health and safety programs have been discussed with each group. We have stressed always the fact that only through self-education can these programs be effectively carried out. We have urged each to work with the County Medical Society in carrying out any program.

No figures on membership have come in but we hope to increase our numbers. It seems a fine way for the new doctor's wife to make friends and in turn offer new ideas.

Our State Public Relations Chairman was voted "Woman of the Year" in Phoenix recently. The President of the Maricopa County Auxiliary and the State Public Relations Chairman were given special recognition by the County Medical Society for outstanding work in raising money and helping establish the Child Guidance Clinic in Phoenix. Both women are on the State Mental Health Board as is the Auxiliary Chairman of Mental Health from Tucson. In Pima County a radio health program is carried on through the local schools with the participants school children. Two counties have weekly radio programs which they get from AMA. Two counties give audiometer tests in the local schools.

The nurse recruitment program is outstanding with the Auxiliary and the Arizona State Nurse's Association working together in planning and executing details. This year a special committee "Careers in Nursing" has been most active. This committee conducted a panel type symposium on Nursing Education. It was held in the Student Union Building at the University of Arizona. The moderator was Mrs. Nau, head of Vocational Guidance at Tucson High School. Guest speakers were Director of St. Mary's School of Nursing in Tucson; Directors of Schools of Nursing in Phoenix; Chairman of Arizona State Board of Nurses Examiners; President of Arizona State Nurses Association and President of the Arizona Hospital Association. All High School counselors and Principals in Southern Arizona were invited to attend the meeting. There were more than 50 people at the session.

On March 5 a statewide workshop for all persons interested in nursing education and student nurse recruitment will be held in Phoenix, at Good Samaritan Hospital. A field consultant for the National League for Nursing will participate in the workshop along with the Arizona State Nurses' Association, the Woman's Auxiliary to the Arizona Medical Association, the Arizona Association of Student Nurses and school counselors.

Future nurses clubs have been sponsored in the high schools through the state. In Yuma the nurse recruitment chairman for the County Auxiliary organized a group of 40 girls. They are active in the hospital as aids. All of the High Schools in Pima County have organized clubs.

The President of the Arizona State Nurses' Association, the President of the Woman's Auxiliary to the Arizona Medical Association, and the President of the Arizona Association of student nurses met with Governor McFarland to proclaim "Nurse Recruitment Week" February 13-19. Each hospital in the state with a training school will hold open house to which all interested high school students are invited. The Auxiliary members furnish food and transportation for these events.

In the Fall, 7 girls were given loans for student nurse training. These girls came from Nogales, Tucson, Clifton, Miami, Phoenix, Laveen and Prescott. To date, 22 girls have taken advantage of the Loan Fund, and $5,750 is in circulation.

Our legislative chairman has kept a file of the Washington Letters, as has the President. We feel that these give a summary of the broad fields of legislation which will provide the major health issues of the Congress. The chairman has suggested round table discussion groups for each auxiliary as current health issues come up in State and National. Her job is one of education for each doctor's wife.

Gift subscriptions for "To-Day's Health" magazine were sent to foreign missionaries with the $40 prize money Arizona won on sale of subscriptions for 1954. Each county group stressed the importance of getting this magazine into as many homes as possible, since it is the only official health magazine available for the lay public.

Each month articles have appeared in Arizona Medicine written by various State chairmen of the Auxiliary, thus, we hope to keep our members better informed.

The Civil Defense Chairman has attended state meetings whenever necessary and has kept in touch with county chairmen.

This past year I have especially attempted to educate the members of the Medical Auxiliary about the A.M.E.F. We hope to have a substantial gift from our State to this fund.

Mrs. George Turner, our National President, will be our guest at the Convention on May 6 and 7. She is most attractive and capable and one of whom we can be justly proud as a representative of the wives of all doctors.

Sincerely,
Gladys Storts
(Mrs. Brick P. Storts)
President, Woman's Auxiliary
To the Ariz. Med. Assn., Inc.

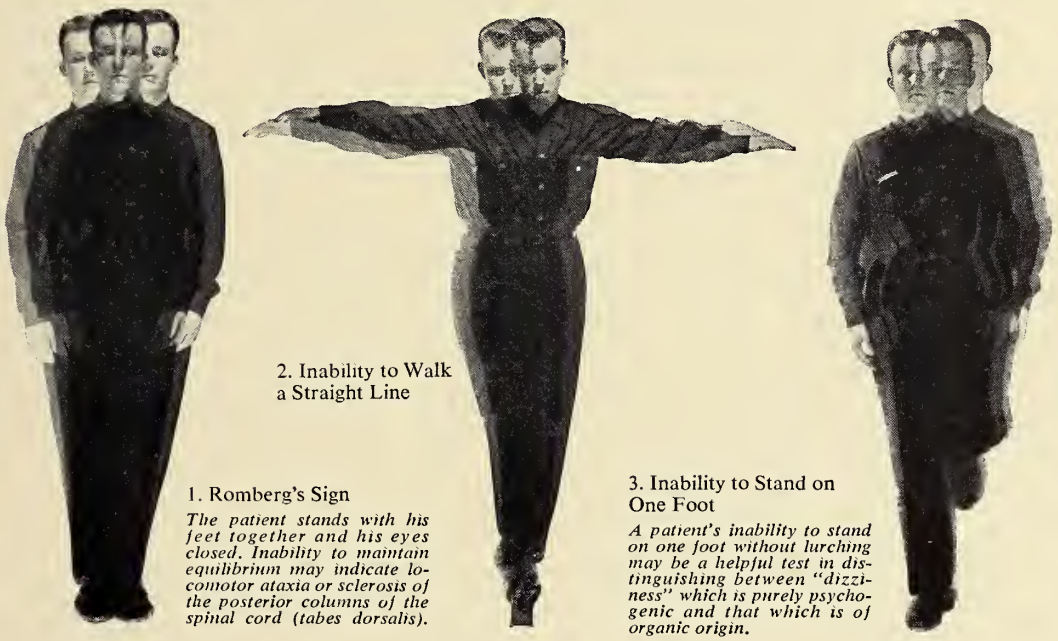
THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE VETERANS MEDICAL AFFAIRS LIAISON COMMITTEE

We have had no meetings of this Committee during the last year as no further problems have been presented to us. At our last meeting with the officers of the State American Legion we had agreed to wait and see if the Veterans Administration and the Veterans organizations could correct some of the abuses which they had admitted had occurred in the past. They stated they were

DRAMAMINE® IN VERTIGO

Notes on the Diagnosis and Management of "Dizziness"

II. False Dizziness



1. Romberg's Sign

The patient stands with his feet together and his eyes closed. Inability to maintain equilibrium may indicate locomotor ataxia or sclerosis of the posterior columns of the spinal cord (tabes dorsalis).

2. Inability to Walk a Straight Line

3. Inability to Stand on One Foot

A patient's inability to stand on one foot without lurching may be a helpful test in distinguishing between "dizziness" which is purely psychogenic and that which is of organic origin.

False dizziness is a sensation of sinking or lightheadedness which is often of psychogenic origin. It should be distinguished from true "dizziness" or vertigo[1] in which there is a definite whirling, moving sensation.

Unsteadiness, lightheadedness and similar manifestations of false dizziness[2] may be psychogenic or the result of arteriosclerosis, hypoglycemia, drug sensitivity and general metabolic disturbances such as anemia and malnutrition. Hypertension is often the cause of these symptoms.

Psychogenic dizziness probably originates at the highest brain centers. It may be described as a sense of uncertainty with occasional mild lurching but not to the point of falling. In these patients there is no nausea, no disturbance of vestibular pathways and otologic and neurologic examinations are negative. The sensation is unaffected by head movement. Symptoms usually disappear[3] with complete rest.

Dramamine® has been found highly effective in many of the conditions already mentioned. Maintenance therapy with Dramamine will often keep the patient from becoming incapacitated by his condition.

Dramamine is also a standard for the management of motion sickness and is useful for relief of nausea and vomiting of fenestration procedures and radiation sickness and for relief of "true dizziness" of other disorders.

Dramamine (brand of dimenhydrinate) is supplied in tablets (50 mg.) and liquid (12.5 mg. in each 4 cc.). G. D. Searle & Co., Research in the Service of Medicine.

1. Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.
2. DeWeese, D. D.: Symposium: Medical Management of Dizziness. The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. *58*:694 (Sept.-Oct.) 1954.
3. Kunkle, E. C.: Central Causes of Vertigo, J. South Carolina M. A. *50*:161 (June) 1954.

SEARLE

as anxious to correct them as we were.

Due to the pressure of business we were unable to attend the meeting in Chicago which was recently held by the Committee on Federal Medical Services and we have not had an official report from this meeting. I understand a joint committee to restudy the problem and try to reach some agreement on the basic points at issue was appointed. The main point at issue was how much Veterans Administration care for veterans with non-service connected disabilities should be allowed. We are waiting with interest the outcome of this conference of the joint committee.

Respectfully yours,
Hilary D. Ketcherside, M.D.
Chairman, Veterans Med.
Affairs Liaison Committee

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE CIVIL DEFENSE COMMITTEE

Your Civil Defense Advisory Committee has met on several occasions and has undertaken and virtually completed two projects which were selected from others considered as being the most effective media for assisting the Civil Defense effort.

I. Through the cooperation of the State Civil Defense Office, letters were sent to Civil Defense Directors throughout the state. The letter informed these key men of the existence of our committee and pointed out how the medical profession is preparing for mass casualty events war and non-war in origin. The letter also offered the services of Arizona Doctors of Medicine on a local level and through Doctors Joseph M. Greer and Clarence G. Salsbury, State Civil Defense Medical Directors, assisted by this advisory committee as an auxiliary group. A number of acknowledgements were received all complimentary and appreciative in nature.

II. A symposium on mass casualty care is being prepared to appear in "Arizona Medicine". Entirely authored by Arizona physicians and to occupy an entire issue of the Journal, it will represent a primer for the physician's use for quick, concise emergency information in case of mass disaster. To our knowledge only two states, Michigan and Missouri, have previously undertaken a similar project.

This committee has discussed in detail many facets of the physician's part in civil defense. **All** Arizona doctors should be ever alert to the demands that may be placed on them in the sudden mass distaster. It is to this end that this committee recommends the future frequent use of "Arizona Medicine" and all other media possible to thoroughly familiarize **all** Arizona physicians with organizational and technical developments in coping with mass disaster.

The members of this committee have been most diligent and efficient; they have travelled long distances and devoted hours of time. It is with gratitude to each of them that this report is most respectfully submitted.

Sincerely yours,
G. Robert Barfoot, M.D.
Chairman

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE VOLUNTEER ARIZONA ADVISORY COMMITTEE TO THE SELECTIVE SERVICE SYSTEM

The Volunteer Arizona Advisory Committee to the Selective Service System continued its operation during the fiscal year 1954-55, under the chairmanship of Doctor Joseph Madison Greer of Phoenix. Members serving in such capacity included Francis M. Findlay, M.D., of Kingman, Preston T. Brown, M.D., of Phoenix, Harold W. Kohl, M.D., of Tucson, Jesse B. Littlefield, M.D., of Tucson, Robert M. Matts, M.D., of Yuma, Joseph P. McNally, M.D., of Prescott, Donald E. Nelson, M.D., of Safford, and Arnold H. Dysterheft, M.D., of McNary. This group is primarily interested in the medical aspects of the activity. In addition and representing the dental profession are William A. Baker, D.D.S., of Phoenix, David H. Heron, D.D.S., of Phoenix, J. W. Dickson, D.D.S. of Winslow, and W. R. Pinkerton, D.D.S., of Tucson; representing the veterinarians is Jack A .King, D.V.M., of Phoenix, State Veterniarian; and representing the nursing profession is Mrs. Frieda B. Erhardt, R.N., of Phoenix; also included in the membership is the Commissioner of Public Health of the State of Arizona, Clarence G. Salsbury, M.D. of Phoenix.

The function of the Arizona Advisory Committee is to review circumstances surrounding the call for induction by the Selective Service System affecting the medical, dental, veterinarian and nursing professions, to determine "availability". The actions of this committee are subject to review by the National Advisory Committee to the Selective Service System operating under the Chairmanship of Howard A. Rusk, M.D., with headquarters in Washington, D.C.

Attached is a tabulation of information received from the Arizona State Headquarters of the Selective Service System dated February 28, 1955, setting forth currently established classifications under Priorities I, II, III, and IV, all of medical doctors. You will note that in priorities I and II there are listed eight doctors who have "enlisted"; five doctors classified "essential" by their respective local draft boards, one doctor deferred account "dependency" and eight doctors "unacceptable", for a total of twenty-two doctors. While the activity of this committee in 1954 has been appreciably reduced, primarily the result of reduction in draft call by the armed forces, it is apparent at this writing with the change in the international picture that service calls will be stepped up during the year 1955. It has been stated that the number of medical doctors available following completion of their medical education and internship will not be sufficient to meet demand and it is anticipated there will be increased activity involving the group under Pri-

1. That in spite of your Committee making very vigorous efforts to schedule a program two years in advance, it has been impossible to do so because of the above noted difficulties, and therefore, we recommend that a program for the ensuing year be completed by the 1st of September with the following allowances:

a. Reservation of at least four periods before the Scientific Assembly for local speakers, who desire papers and may not know of the deadline.

b. That all Special Societies be contacted and told by June 1st each year that a meeting is coming at such and such a date, and if they desire a speaker, that they will suggest one immediately to the Committee and if this is not done, that they will not be included in the program.

c. Such announcement be made of the closing time of program for each year; the suggested time is the 1st of September and that this be published.

2. That the Committee feels that meeting place at the San Marcos at Chandler, Arizona has many advantages over other places, where the Association has met in the past, and recommends that it be considered for the site of the 1956 convention.

Cordially yours,

Harry E. Thompson, M.D.
President-Elect and Chairman of Scientific Assembly Committee.

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE PUBLIC RELATIONS BOARD

The Public Relations Board of The Arizona Medical Association, Inc., for 1954-55 was made up of the following doctors: Lindsay E. Beaton, M.D. (Tucson), Paul H. Case, M.D. (Phoenix), Max Costin, M.D. (Tucson), Carlos C. Craig, M.D., Vice Chairman (Phoenix), Donald F. DeMarse, M.D. (Holbrook), Fred W. Holmes, M.D. (Phoenix), Leo J. Kent, M.D. Chairman (Tucson), D. W. Melick, M.D. Secretary (Phoenix), Zenas B. Noon, M.D. (Nogales), James T. O'Neil, M.D. (Casa Grande) and Oscar W. Thoeny, M.D., President (Phoenix). A meeting of the Public Relations Board of The Arizona Medical Association, Inc., held in the El Conquistador Hotel, Tucson, Arizona, Sunday, July 11, 1954, convened at 11:10 a.m., Leo J. Kent, M.D., Chairman, presiding.

1954-55 BUDGET

It was reported that the House of Delegates of this Association in second regular session, April 28, 1954, adopted a budget of appropriatoins for the fiscal year 1954-55 allotting to the Public Relations Board a sum of $1,000. This sum is considerably less than that requested by the Board; however, Council wishes to assure it that it is not intended to curtail the program of the Board and point out that said Board may apply to Council as expenses arise for additional monies which may later be appropriated to it, if available.

"YOUR DOCTOR" PAMPHLET

It was reported that Council at its meeting held November 28, 1953 gave consideration to the reissuance of the Public Relations Board pamphlet entitled "Your Doctor" disapproving such action at that time.

INDOCTRINATION BROCHURE

Considerable thought was given to the development of an indoctrination brochure. It was determened that the content should include the following:

1. A section to include a message from the President to embrace:

(a) An official welcome;

(b) Advantages to members in both the component county medical society and state association;

(c) Suggestion to new physicians practicing for the first time in this state to attend county society meetings to become better acquainted with the local doctors and acceptable standard practices;

(d) An invitation to the doctor's wife to join the Woman's Auxiliary.

2. A section to include information regarding medical ethics, the content to include:

(a) A Code of Ethics of the American Medical Association;

(b) A resume of local consultation practices;

(c) Local practice as to advertising, erection of signs, and any other pertinent suggestions.

3. A section giving the Industrial Commission opportunity to supply a message which might include certain desirable instruction to doctors.

4. A section on Blue Cross - Blue Shield.

5. A section dwelling on veterans' care.

6. A section making available to each county the privilege of including data and possibly an application form for local society membership setting forth procedure and any general statement they may care to make regarding practice in that county.

7. Asection on insurance which should include:

(a) Malpractice insurance information;

(b) A word regarding group accident and sickness coverage made available and sponsored by the state association.

8. A section dealing with public relations and available media, such as films, both state and national (AMA), pamphlets, etc.

9. A section on Grievance Committee operations on both local and state levels available for physician consultation or help at any time, and instructions as to procedure for referral of complaints made by patients.

10. A section on medical defense as provided by the State.

11. A section on press, radio and television bordered on "code" application where available as a guide to the physicians.

This Brochure is now completed and is available for all new physicians entering practice in the State of Arizona.

"TO ALL MY PATIENTS" PAMPHLET

The Executive Secretary reported that the Par Press of Phoenix delivered on or about March 10, a total of 25,000 pamphlets entitled "To All My Patients" at a cost of $261.41; and again on or about May 10, 1954 an additional sum of 50,000 pamphlets were delivered at a total cost of $363.60. Distribution has been made on order by individual member doctors. To date over 65,424 pamphlets have been delivered representing over 230 orders, including one from the American Medical Association for 500.

In case of need for a reissue of these pamphlets the doctors requesting same will be billed at the rate of $.008 per copy, or $8 per thousand. It was the feeling of the Board that this pamphlet was highly successful.

"YOUR DOCTOR" FILM

It was learned through the Secretary that requests for "Your Doctor" film have increased in number and that during the current fiscal year approximately 2000 students and over 500 adults have viewed the film. There has been an increase in requests for the film and it has been made known to all local societies that such film is available.

PRESS-RADIO-TELEVISION CODE OF COOPERATION

On or about August 15, 1952, the Maricopa County Medical Society adopted a press code to be used as an instrument for better understanding between the press and medical doctors in the Maricopa area.

It was unanimously carried that this Board go on record as favoring, for state-wide adoption, the Maricopa County Medical Society press code to include radio and television, as a guide and that such recommendation be referred to Council for its further consideration and approval.

ARIZONA STATE FAIR EXHIBIT

It was determined by the Board that there would be no participation by the Association this year in the forthcoming Arizona State Fair usually held in November.

TELEVISION

Discussion ensued as to whether each society should assume responsibility for expenditures involved in local television programs. Doctor Thoeny expressed the view that the state should take care of small expenses associated with television programs. They are considered good public relations media, and it was his feeling that the Association should support same if necessary. The Board went on record as approving television presentations.

It was unanimously carried that in view of the fact that we are already committed to "The M.D.'s Notebook" program, the Executive Secretary be empowered to spend up to but not exceeding $40 per month on either program (Phoenix or Tucson).

It was reported that the Maricopa County TV show has been interrupted temporarily, but that plans for a future program are in the making. Pima County has a weekly 30 minute program entitled "Appointment With Your Doctor". Such program is being financed by the studio itself as a public service. The program to date has been received favorably by Pima County residents.

The second meeting of the Public Relations Board took place on November 19, 1954 at the El Conquistador Hotel.

INDOCTRINATION BROCHURE

The final preparations for the Indoctrination Brochure were made and the Executive Secretary was instructed to proceed with its publication.

PAMPHLETS

Several brochures and pamphlets from various County Medical Societies and from the AMA were reviewed and the advisability of adoption of some of these pamphlets was discussed.

ARIZONA STATE FAIR EXHIBIT

Plans for the 1955 State Fair exhibit are still under advisement and no definite report on this matter can be made at this time. It is planned to contact the various health agencies such as State Department of Health, Blue Cross and Blue Shield, Blood Bank, etc., regarding participation in a composite booth at the 1955 State Fair to include possibly free chest x-rays, hemoglobin, blood typing, taking of blood pressures, etc.

Respectfully submitted
Leo J. Kent, M.D.
Chairman

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE BLUE CROSS-BLUE SHIELD INVESTIGATION COMMITTEE

Concerning the report of the committee on Blue Cross-Blue Shield investigation of the Arizona Medical Association for the past year, I wish to advise that this committee was not organized and did not function during this time.

During the past year, I have had several discussions with Doctor David C. James of the Arizona Blue Shield concerning possible areas in which the committee might function to be of a value to the Arizona Medical Association. The situations which we discussed at that time resolved themselves without interference.

During the past year, I have been engaged in the establishment of a program for some postgraduate education in Maricopa County, as well as serving as local arrangements chairman for several medical meetings. Because of this I actually did not have time to organize the Blue Cross-Blue Shield investigation committee.

I feel that some such committee is worthwhile and could serve as a useful function for the Arizona Medical Association. The present committee is much too large and unwieldy to function properly and I would recommend that such a committee be composed of not more than five members and preferably three or four members. I feel that such a committee should have no connection

ority III, which totals 168. Priority IV, "unclassified", sets forth a total of 280 medical doctors for a grand total of 470 in all four priorities as of February 28, 1955.

As previously reported, physical examinations of all physicians up to age 37 has been requested, and is in process. In March, 1955, the call for physicians totaled 1275. To meet this Selective Service call, it is necessary that Priority I, all ages, Priority II, without restrictions as to months of service, and Priority III, born on or after January 1, 1917, be included. However, every effort is being made to make available for service all those Priority II young registrants born after August 30, 1922 to protect men of that priority who are older.

In the Congress of the United States, the Defense Department is asking for a two year extension of the Doctor Draft Law in line with administration's plan for handling the medical, dental and allied specialist problem of the Armed Services for the immediate future. The extension bill doesn't continue the $100 a month equalization pay. The Defense Department is working on legislation to give men who have no regular draft obligation the $100 from the start; those with regular draft obligation would not get the $100 unless they volunteered for more than the required two years. The Department hopes the committee will take up the Doctor Draft and the $100 Pay Bill together.

Possibly it would not be remiss to include in this report exceprts from one recently released by Arthur S. Fleming, Director, Office of Defense Mobilization, dealing with Mobilization and Health Manpower" released by the National Resources Advisory Committee. It is the conclusion that in spite of said expanding educational facilities to train health personnel, our national population growth and the rising level of demands for health services will cause continuing shortage of health personnel "for many years to come".

The report points out that the number of medical school graduates increased from 5,100 in 1940 to 6,800 in 1954 and is expected to reach 7,000 by 1960. The national population increase, however, has been so rapid that the overall 1960 ration of physicians to population, the report predicts, will be 133 per 100,000 population as compared to 137 in 1950.

The current gross ratio of 1.32 physicians per 1,000 population is only slightly less than the 1.36 ratio in 1941, but the net ratio of active physicians during this period has dropped from 1.25 to 1.18 because of the increasing proportion of older physicians who have retired from active practice.

The report predicts that similar shortages will continue to exist in dentistry. The number of dental school graduates has risen from 1,750 in 1940 to 3,000 in 1954 and is expected to reach 3,200 by 1960. Our population, the report points out, will increase by 9 percent by 1960, but the number of dental graduates by but 5 percent.

A major factor in the current and expected shortage of dentists is the disproportionately small share of dentists in their early 30's and early 40's. As compared to 38 percent of the physicians, over 45 percent of the nation's dentists are 50 years of age or older.

The ratio of 1.53 active dentists per 1,000 population has remained constant since 1941 because of the substantial increase in the number of dental school graduates during this period.

In contrast to the fields of medicine and dentistry, the ratio of nurses to population has shown significant improvement since the prewar years. Today the nation has 389,600 active nurses giving a ratio of 2.40 active graduate nurses per 1,000 population as compared to 2.15 in 1940.

In 1953, there were over 29,000 graduates of nursing schools. The chief obstacle to increasing the number of nurses graduating each year is the lack of qualified applicants. Schools of nursing, the report states, could accommodate more students than are enrolled, but the decreased number of girls in the late teenages tends to limit the number of nursing school applications.

In view of this, the report concludes, it is probable that the total number of graduates will not increase materially for another five years and that the nurse population ratio will be much the same in 1960 as it is today.

As chairman of our Arizona Advisory Committee, I wish to thank each participating member for his continuing interest and efforts expended, providing the services the group is called upon to render. Their cooperation has made a difficult task more bearabel, and its accomplishments reflect credit in their judgment and to the professional associations each represents.

Respectfully submitted

Joseph M. Greer, M.D.
Chairman

ARIZONA STATE HEADQUARTERS OF THE SELECTIVE SERVICE SYSTEM
SOURCE: SSS FORM NO. 117, 28 Feb. 1955
PHYSICIANS

Classification	I	II	III	IV	Total
I-A Acceptable	0	0	44	0	44
I-A Not examined	0	0	8	0	8
I-C Enlisted	4	4	10	0	18
I-C Discharged	0	0	0	0	0
I-C Reserve	0	0	0	0	0
I-O Conscientious Objector	0	0	1	0	1
I-D Commissioned	0	0	4	0	0
2-A Essential	2	3	18	0	23
2-S School	0	0	2	0	2
3-A Dependency	1	0	0	0	1
4-A Veteran	0	0	1	0	1
4-C Alien	0	0	1	0	1
4-F Unacceptable	7	1	54	0	62
5-A Over 51	0	0	25	0	25
Not Classified	0	0	0	280	280
TOTALS	14	8	168	280	470

THE ARIZONA MEDICAL ASSOCIATION, INC. ANNUAL REPORT OF THE SECRETARY

Since April first of last year, 76 new members were admitted into our component county medical societies and this Association as follows: Apache, 1; Cochise, 2; Coconino, 1; Gila, 1; Graham, 1; Greenlee, 1; Maricopa, 42; Navajo, 1; Pima, 19; Pinal, 3; Yavapai, 2; Yuma, 3. There are at the present time 796 members in the State Association, compared with 746 at this date last year. Membership by county is as follows:

Apache	4	Mohave	2
Cochise	23	Navajo	6
Coconino	15	Pima	228
Gila	18	Pinal	18
Graham	7	Santa Cruz	8
Greenlee	7	Yavapai	21
Maricopa	414	Yuma	25

The 796 total membership figure is broken down into the following classifications: ACTIVE, 733 (including Fifty-Year Club); SERVICE, 26; and ASSOCIATE, 37.

Council has held four meetings to date within the 1954-55 fiscal year; one on May 23, 1954; a second on October 3, 1954; a third on November 21, 1954; and a fourth on March 20, 1955. All were held in Phoenix, with the exception of the November 21st date which was held in Tucson, all of a full day's duration. This body is next scheduled to meet Wednesday, May 4, 1955, in Tucson, during the Sixty-Fourth Annual Meeting. Each meeting was well attended, including representation from all quarters of the state, and the business of your Association continues to be handled with efficiency and dispatch. Undoubtedly the Chairman of Council will submit his report, including the major items discussed and actions taken.

Legislation consumed considerable time and deliberation, and the Chairman of the Legislation Committee will likewise submit a detailed report on the accomplishments. Possibly the most important business before this committee during the year involved its cooperation with legislative representatives of the State of Arizona in the development and adoption of a tuberculosis control act. In this connection, I might add that the advice and direction of our legislative program by Mr. Edward Jacobson, our Association attorney, continues effective, and the prestige of the medical profession appears well established in legislative parlance.

The Professional Board held three meetings; one in Phoenix, June 27, 1954; one in Tucson, November 21, 1954; and one in Phoenix, March 20, 1955. This body has carried on a very active program in the conduct of postgraduate medical seminars throughout the state, this year all in one circuit in October. A detailed report of the activities of this Board has been prepared and will be available to the membership for review.

The Public Relations Board held one meeting, July 11, 1954 in Phoenix. A report of its activities will be presented for review, the major item being the preparation of an Indoctrination Brochure successfully concluded and being distributed to all new licentiates.

The Grievance Committee was not required to hold any meetings during the fiscal year. The few cases presented were capable of satisfactory dismissal without the necessity of meeting.

No applications for medical defense were filed with our Medical Defense Committee during the current fiscal year to date. The problem of malpractice insurance is now being studied by the Medical Economics Committee with emphasis on group plans.

The Scientific Assembly Committee has labored arduously during the year to develop an outstanding scientific program which will be presented during the coming convention.

The Publishing Committee carried on its functions throughout the year under the chairmanship of R. Lee Foster, M.D., who was elected Editor-in-Chief by the House of Delegates.

The Arizona Advisory Committee to the Selective Service System continued its operations through the year, with number of military service calls slightly increased over last year.

In conclusion it is my observation that the officers and Council of our Association, together with the members of our various boards and committees, have about completed another year of effective administration and accomplishments. Each is well aware of his responsibilities and has served with distinction and untiring energy. The administration of the business of this Association under the direction of the Executive Secretary and his staff continues to give a good accounting of its stewardship.

It has been my privilege and pleasure to serve you during the fiscal year, and I wish to take this opportunity to thank each and all of you for your continuing support, cooperation and indulgence.

Respectfully submitted,
D. W. Melick, M.D.
Secretary

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE SCIENTIFIC ASSEMBLY COMMITTEE

This is to report the activities of the Committee in the last year. The committee has met on four separate occasions. The program for the Scientific Assembly was completed approximately in August. Since that time, and because of difficulties, certain recommendations are made at this time. Those difficulties included late comers who desired to give papers; difficulties in scheduling time with speakers who felt that they should have more time or a better spot on the program; and some difficulties regarding the Special Societies who felt that their speakers should be put on the program, even though the program was completed at an early date this year.

The Committee has the following recommendations:



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with either Blue Cross or Blue Shield aside from the fact that the physicians are participating members of the Blue Shield Plan. This committee should investigate complaints concerning these organizations and report the results of this investigation to the society as a whole. It should also evaluate the facilities existing in the state for medical care and make recommendations to the Arizona Medical Association for possible improvement of these facilities. It should also conduct a continuing study of the means for providing medical care for the public and of methods for their improvement. Of course, in making these recommendations, I am referring primarily to the economic phase of medical care.

Respectfully submitted

James D. Barger, M.D.
Chairman

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE PROFESSIONAL BOARD

Three meetings of the Board were held during the current year. The first on June 27th, 1954, the second on November 21st, 1954, and the third on March 20th, 1955.

The subcommittee on tuberculosis under the chairmanship of Dr. Farness had as its chief effort for the year the furtherance of a more adequate tuberculosis program for the state. To date it seems doubtful whether the legislature will pass the law, which has been supported by the association.

The subcommittee on cancer under the chairmainship of Dr. Bregman has as its main activity the cancer seminar which was again successfully completed in January. This is becoming rapidly one of the most important medical meetings in this district. Arrangement for it takes a great deal of time and effort.

The subcommittee on mental diseases under the chairmanship of Dr. Duisberg met with the Board of Control of the State Hospital. This committee reports there has been great improvement in the Arizona State Hospital over the past few years, but that there is great need for a more adequate staff. This committee has also been considering the revision of laws relative to commitment of mental patients.

The subcommittee on hard of hearing under the chairmanship of Dr. Kinkade has maintained advisory contact with the programs in the state for the hard of hearing and is again planning a scientific exhibit on hearing conservation for the annual meeting of the association at the time of the state medical meeting.

The subcommittee on maternal and child health under the chairmanship of Dr. Semoff is planning an exhibit for this year's annual meeting of the medical association. In addition, Dr. Semoff has written articles for the lay press as well as the medical profession stressing the need of a more adequate program on maternal and child health in the state. This committee has also reviewed the bill for licensing midwives.

The subcommittee on crippled children under the chairmanship of Dr. Williamson has interested itself in the activities of the Crippled Children's Division and the Arizona Society for Crippled Children. There is to be a crippled children's program at the state meeting. This subcommittee has also given advice on the status of the polio prevention program.

The subcommittee on venereal diseases under the chairmanship of Dr. Howard has not been active owing to Dr. Howard's illness.

The subcommittee on general medicine on which Dr. Powell and Dr. Yount serve has interested itself in the problems of the general practitioner. Dr. Yount, in particular, arranged the Prescott clinic which was conducted by Dr. Kober.

The subcommittee on post graduate education under the chairmanship of Dr. Thompson arranged for seminars which were conducted at the Grand Canyon, Yuma, Florence, Bisbee and Safford by Dr. Brown and Dr. Moretz of the University of Utah Medical School and by Dr. Creasman, Dr. Jekel, Dr. Gain and Dr. Eberling of Arizona. The clinics were held in late October. They were well attended throughout the southern part of the state, but the attendance in the northern part was very sparse, and unquestionably we should return to the custom of having them conducted in three communities rather than at the Grand Canyon for the northern tier of counties.

In addition, the Professional Board helped to sponsor a series of four television seminars prepared by the faculty of the University of Utah College of Medicine and broadcasted from Yuma and Tucson through the courtesy of local radio stations. In Tucson approximately fifty physicians stated that they saw at least part of the programs, and all but one expressed desire for more of them. This form of post graduate education is in its infancy, but gives promise of great usefulness for the future. Some of these programs would unquestionably be excellent for use at the monthly medical meetings of either the small or large county societies.

The third activity of the subcommittee on post graduate education was the arranging of "wet" clinics in the smaller cities of the state. The idea is to have case histories sent to a consultant from Phoenix or Tucson on a certain subject; say, cardiovascular diseases, well ahead of the meeting, so that he can prepare an adequate discussion of these cases. At the time of the meeting patients are present, if possible, and cases are thoroughly discussed with questions. The first such clinic was held in Prescott in September by Dr. Leslie Kober of Phoenix and apparently well received. A second such clinic is planned for this spring in Yuma. The committee will be glad to arrange any future clinics desired in any subjects by any of the smaller cities.

The expenses of this year's Professional Board activities exceeded the allotted budget due to the fact that the State Department of Health did not have funds available to assist us. This year an

attempt was made to lessen the expenses of the seminars by having only one series for both the northern and southern counteis, whereas formerly it had been separate trips for the north and south. It will apparently work better to return to the divided seminars, since it works a hardship on the speakers to travel to six or seven different communities on one tour. It is, therefore, recommended that two thousand dollars ($2,000.00) be allotted for Professional Board tctivities for the coming year, and that the custom of charging ten ($10.00) for attendance at the seminars be continued.

It has been a pleasure to serve as Chairman on this Board.

Respectfully submitted
Hugh C. Thompson, M.D.
Chairman

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE PRESIDENT

The work of the Association has been accomplished by the members of the standing and special committees and their able chairmen, and the reports of the committees will illuminate the work accomplished by the Association the past year. The members of many committees contributing to those activities has been noted in a previous letter to the editor as being about one hundred forty or almost twenty percent of the enrollment. With the changing personnel on each committee from year to year, everyone who is desirous of or willing to participate in the affairs of the Association should within a very short time be afforded this opportunity. The thanks of the President and the members of the Association is extended to the chairmen and members of the committees.

This Association is now of such size and has so many activities that serious thought should be given to having the services of a Doctor of Medicine to work with the Executive Secretary of the Association. This would provide continuity of effort and, I believe, would greatly expand the activities of the Society and probably of other allied groups such as the Cancer Society, Heart Society, Rheumatic Society, etc.

Finally, it is my belief that the Arizona Medical Association might well alter its views in regard to legislation. The Association has always assumed a defensive attitude, but I believe the time has come when we might change this to a more militant view and propose such legislation as will protect the people of Arizona from inferior health care.

Sincerely yours,
Oscar W. Thoeny, M.D.
President

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE OSTEOPATHIC COMMITTEE

The delegates are of course familiar with the action of the American Medical Association taken in New York in 1953 following receipt of a report presented by a special committee under the Chairmanship of John W. Cline, California, relating to "eliminating the stigma of cultism" from osteopaths. At that time, the American Medical Association, because of the controversial nature of the report, determined that its constituent bodies should be given opportunity to consider the problem and be prepared through its respective delegates to convey local opinion relating to (1) should modern osteopathy be classified as "cultist" healing; (2) since the objectives of the American Medical Association include improvement in undergraduate and postgraduate education, should doctors of medicine teach in osteopathic schools; and (3) should the relationship of doctors of medicine to doctors of osteopathy be a matter for determination by the several state associations.

For the purpose of study, Council of the Association appointed a special osteopathy committee then comprising the following members: Reed D. Shupe, M.D., Chairman (Phoenix), Jesse D. Hamer, M.D. (Phoenix), Harry E. Thompson, M.D. (Tucson), Oscar W. Thoeny, M.D. (Phoenix), and D. W. Melick, M.D., Secretary Ex-Officio (Phoenix). At the request of members of the Arizona Osteopathic Association, a meeting was arranged for the purpose of discussing this important problem. In addition to the membershpi of this committee the following doctors of osteopathy were present: Russell Peterson, D.O. (Phoenix), member of the Board of Trustees of the Arizona Society of Osteopathic Physicians and Surgeons, H. E. Allshouse, D.O., Secretary-Treasurer (Phoenix), W. A. Seydler, D.O., Trustee (Stanfield), J. Walter Larkin D.O. (Phoenix), R. O. McGill, D.O., Executive Committee member (Phoenix) and L. A. Nowlin, D.O., Past President (Phoenix).

During the course of this joint meeting between the doctors of osteopathy and doctors of medicine, certain specific questions were put to the former group in attendance: (1) whether or not the practice of osteopathy as currently pursued adheres to the "cult" concept as laid down by A. T. Still, founder of Osteopathy, (2) whether or not the doctors of osteopathy in this state were in accord with the study of relations between osteopaths and medical doctors as suggested in the "Cline report" being considered by the American Medical Association which may lead to the eventual amalgamation of the two groups, and (3) whether or not the osteopathic group wishes to continue further study of the problem through scheduled meetings of these two committees. The osteopaths present were rather reluctant to commit themselves on questions one and two prior to the scheduled annual meeting of the American Osteopathic Association. It was understood that its national body would consider the problem in July 1954. Our committee gained the impression that while the current practice of osteopathy followed closely, if not entirely, the present day concept of the practice of medicine, they were somewhat reluctant to denounce the "Still" theory of manipulation. As to the possibility of eventual amalgamation of the two groups, doctors of ostopathy and doctors of medicine, osteopaths of

course desire equal professional standing. However, here again, they were reluctant to express a local position until they had knowledge of the attitude and stand to be taken by the American Osteopathic Association. They wish to continue joint meetings, feeling that much good could result in an exchange of views relating to mutual problems. This particular meeting was called in the hope that Dr. Hamer, delegate to the American Medical Association, representing this Association, might take back with him an expression of the local views of the osteopaths to the annual meeting of AMA scheduled to be held in San Francisco.

The House of Delegates of the Arizona Medical Association, in annual meeting held April 28, 1954, adopted a resolution recommending to the American Medical Association that its House of Delegates declare so little of the original concept of osteopathy remans that it does nto classify medicine as currently taught in schools of osteopathy as the teachings of "cultist healing"; that pursuant to the objectives and responsibilities of the American Medical Association, which are to improve the health and medical care of the American people, it is the policy of the Association to encourage improvement in undergraduate and postgraduate education of doctors of Osteopathy; that the relationship of doctors of medicine to doctors of osteopathy is a matter for determination by the state medical associations of the several states, and that the state associations be requested to accept this responsibility; and that the American Medical Association committee for the Study of the Relations Between Osteopathy and Medicine, or a similar committee, be established as a continuing body.

At the June meeting of the American Medical Association held in San Francisco a progress report submitted by the special committee of that body was adopted. It recited among other things, that "the justification or lack of justification, of the 'cultist' appellation of modern osteopathic education could be settled with finality and to the satisfaction of most fair-minded individuals by direct on-campus observation and study of osteopathic schools. The Committee, therefore, proposed to the Conference Committee of the American Osteopathic Association that it obtain permission for the Committee for the Study of Relations Between Osteopathy and Medicine to visit schools of osteopathy for this purpose."

The House of Delegates of the American Osteopathic Association in session in Toronto, July 15, 1954, directed the Conference Committee to continue in its deliberations with the Committee for the Study of Relations Between Osteopathy and Medicine of the American Medical Association. In expressing its confidence in the four years work of the A.O.A. Conference Committee the House unanimously agreed that the Committee should have the authority to negotiate with the A.M.A. Committee on possible visitation by the latter of osteopathic colleges. This Committee will be accompanied by representatives of the A.O.A. Conference Committee. The purpose of this visitation would be to observe the nature and scope of their educational programs. This observational opportunity would be conducted entirely within limits agreed upon by the two committees. The immediate purpose of such on-campus visitations is to provide information to A.M.A. Committee to assist in its efforts to remove the cultist designation from the osteopathic profession.

During the Clinical Session of the A.M.A. held in Miami, Florida early in December, its Board of Trustees received and approved, and the House of Delegates adopted a progress report of its special committee appointed to Study the Relations Between Osteopathy and Medicine. The committee, headed by A.M.A. Past President John W. Cline, held several meetings with the A.O.A. After these meetings and extensive negotiations, the committee made final arrangements for visiting five of the six schools of osteopathy. Doctor Cline has since appointed members of his committee and several participating deans to make on-campus visits beginning January 28. The committee's complete and final report is expected to be ready for submission to the House of Delegates when it meets in Atlantic City next June. The final report will cover the nature, scope and quality of education in schools of osteopathy.

Respectfully submitted

OSTEOPATHY COMMITTEE
Reed D. Shupe, M.D., Chm.
Jesse D. Hamer, M.D.
Carlos C. Craig, M.D.
David E. Engle, M.D.

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE JOINT COMMITTEE ON IMPROVEMENT OF NURSING SERVICES

The committee on the improvement of nursing services as met twice during the past year, on both occasions with the nursing and hospital representatives. Consideration was given to the institution of a work shop for training nurse supervisors and nursing aides. The project was finally postponed because of lack of funds and adequate information as to who would participate in such a work shop. The matter is to be further discussed at the next meeting of the joint committee in April.

Although no other specific items have been brought to the attention of the committee, it is well aware of the continued and growing shortage of registered and practical nurses throughout this state. To the best of our knowledge, such shortage will continue until approximately 1962, and it is felt that all steps possible should be taken to encourage the proper training of nurses in both fields.

The committee may request a small appropriation, not exceeding $500, to cover further expenses



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in relation to some form of state-wide training program for nurse instruction.

Respectfully submitted

Francis J. Bean, M.D., Chm.
Joint Committee on Improvement of Nursing Services

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE MEDICAL ECONOMICS COMMITTEE

Three meetings of the committee have been held during 1954-55, on June 27, 1954, December 5, 1954 and on March 20, 1955.

Possible invasion of Arizona by the Kaiser Health Plan was discussed at the first meeting. Subsequently, the chairman went to the Kaiser Hospital in Los Angeles, and obtained rather full information concerning the operations of the Kaiser Hospitals and Health Foundation, together with an assurance verbally and in writing that no entry into Arizona was planned at the time.

The question of corporate practice of medicine in relation to the practice of pathology and radiology by hospitals was discussed at considerable length. It was not felt that the committee should take action on this

The question of joint billing and collection of fees was also discussed, and this subject was returned to the Council with the recommendation that more study be made before any conclusions were reached.

The question of extension of the present accident and sickness group insurance coverage now available to members of the Association was discussed and investigated from a number of angles. Propositions put forward by several insurance companies were studied and the coverage available to various state and society groups was reviewed. All these plans have then been referred to an insurance expert in California who is to present his opinion before the final meeting of the committee. At this time a definite recommendation for the Association will be made.

The question of professional group liability insurance with the Association holding a master policy has been studied. It has been understood that the Maricopa County Medical Society is interested in such a program. The committee feels that any such group insurance program should be on a state rather than a county level to allow the physicians in small counties to participate. Further recommendations on this will be made to the Association before the annual meeting.

The problem of temporarily unemployed indigents, particularly transient agricultural workers, was presented to this committee. Considering the magnitude of this problem in Arizona it was felt that if the Council desired to authorize study of this problem a special committee with adequate state-wide representation should be appointed with necessary funds appropriated for its operation.

Respectfully submitted

Hugh C. Thompson, M.D.
Chairman

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE MEDICAL DEFENSE COMMITTEE

The Medical Defense Committee received no requests for assistance during the fiscal year 1954-55. No meetings of the Committee were held or deemed necessary.

The problem of securing a group-type coverage of Professional Liability Insurance is being investigated by the Association's Committee on Medical Economics.

Respectfully submitted

Ernest A. Born, M.D.
Chairman

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE LEGISLATIVE COMMITTEE

The first meeting of the Arizona Medical Association's Legislative Committee was held November 14, 1954 in the offices of the Maricopa County Medical Society. Both state and medical legislative problems were reviewed and that report was filed with the Council of the medical association November 21, 1954. This was the only official meeting of the Legislative Committee, through numerous unofficial meetings of various members were held from that time to the adjournment of the Legislature.

After the Council had endorsed and recommended passage of the tuberculosis control bill as requested by the Legislative Committee, intensive efforts were begun to coordinate all state nonmedical associations in support of tuberculosis legislation. All available means of communication were utilized including the press, radio, television, and public speaking. Tremendous amount of public opinion was aroused, and concerted pressure was maintained on the Legislature throughout its entire session.

Better than fifty bills relating to health were introduced in this session of the Legislature. The tuberculosis measure received most of the attention of the Legislative Committee, and it is a pleasure to report that for the first time in the history of the State of Arizona a specific tuberculosis control was passed. It was in the right direction towards the ultimate control of Arizona's ever-growing tuberculosis problem.

A very carefully planned attack on the naturopathic bill was successful in stripping this bill of all objectionable features, sufficiently so that the bill was ultimately dropped.

It was unfortunate that with the concentration of effort on tuberculosis legislation that the bill relating to the practice of medicine which was sponsored by the Board of Medical Examiners received inadequate attention on the part of the Legislative Committee, making it necessary for the Executive Secretary of the Board of Medical Examiners to recommend that no action be taken on the bill after it had been viciously amended in the Legislature.

The over-all pressure exerted on the Legislature

for health legislation in general I am sure was greatly responsible for the huge increase in the appropriation to the State Department of Health for the coming year.

It is the hope of the Legislative Committee and its Chairman that the Arizona Medical Association will continue its efforts to promote, endorse and even introduce legislation that will improve the health of the people of Arizona.

Respectfully submitted
Millard Jeffrey, M.D.
Chairman

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE INSURANCE INVESTIGATING COMMITTEE

The Council of the State Medical Association had before it while meeting in Tucson, November 24, 1954 a letter dated November 19, 1954 signed by Mr. William B. Huie, Chairman, and Mr. Lloyd Peterson, President of the Arizona Association of Accident and Health Underwriters. This letter was a formal invitation requesting the Medical Association to appoint a Committee to serve with the Insurance and Accident Group for the purpose of discussing, considering and making recommendations to the respective Associations on problems of mutual interest, and which affect the members of both groups in their professional work.

After due consideration and discussion of this proposal, your State Medical Council passed a motion requesting the President of our Association to appoint such a Committee, with the specific request that the Committee not commit the members of this association to any type of fee schedule for professional work done by our members with patients who hold indemnity, hospital, or medical and/or surgical care-paying policies with private insurance carriers. The committee is certainly not to enter into any type of verbal or written contracts with these Insurance Carriers without the consent of the membership of the Association or the House of Delegates.

To this Committee were appointed Doctors W. R. Manning, Royal W. Rudolph, Harry E. Thompson, all of Tucson, and Doctors D. W. Melick, Paul L. Singer, Kent H. Thayer, and Oscar W. Thoeny, all of Phoenix.

On January 27, 1955 your Chairman met with five members of the Board of Directors of the Arizona Association of Accident and Health Underwriters for the purpose of exploring possible areas of mutual interest to the two groups, as well as to arrange liaison mechanisms for future courses of action. Out of this meeting came a number of suggestions for study from which each group might better understand the other and the problems of the other. If acted upon wisely, these would engender improved relationships between insurance producers and the medical profession, and which conceivably would permit both groups to serve the general public more effectively.

A resume of the topics discussed has been mailed to each member of the special committee for their study, and it is hoped that a meeting can be arranged wherein the whole group can ventilate their opinions and thus crystallize our thinking in regard to the various facets which surround the problems involved.

It is hoped that a progress report can be made to the House of Delegates at the forthcoming convention of the Association in May.

Respectfully submitted
Jesse D. Hamer, M.D., Chm.
Insurance Investigating
Committe

THE ARIZONA MEDICAL ASSOCIATION, INC. 1954-55 ANNUAL REPORT OF THE INDUSTRIAL RELATIONS COMMITTEE

During the past year this Committee met once a month in the office of the Medical Advisor to the Industrial Commission of Arizona.

At each meeting we reviewed a number of complete files on cases in which the Industrial Commission and the attending physicians could not agree on fees for the care of the Industrial injuries. In each of these cases we recommend to the Claims Department a fee which we felt to be equitable and to comply with the Fee Schedule. Physicians whose bills were cut were invited to meet with the Committee if they felt that the recommendations were unfair to them. The Industrial Relations Committee is glad to meet with any physician who wishes to discuss any of the provisions of the Fee Schedule. Such meetings are best scheduled in advance through the office of the Arizona Medical Association.

As customary, this committee also acted as the Medical Advisory Board to the Industrial Commission. In that capacity we examined patients sent to us by the Commission and made recommendations regarding further handling.

The Committee recommends to the Industrial Commission that whenever legally possible scheduled, instead of non-scheduled, awards be made. The Committee also recommends to the State Medical Association that it go on record as favoring legislation which would enable the Industrial Commission to make scheduled awards for all permanent disabilities.

Respectfully submitted
Carl H. Gans, M.D., Chm.
Ronald S. Haines, M.D.
Lindsay E. Beaton, M.D.
Zenas B. Noon, M.D.
Robert E. Hastings, M.D.

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

THE MEETINGS OF THE NATIONAL TB ASSOCIATION AND THE AMERICAN TRUDEAU SOCIETY were held in Milwaukee in May. There possibly were other guests from Arizona, but Dr. Hewitt (on a panel of national scope, "The Future of the Small Sanatorium") and Dr. Kosanke of Tucson were there, and Dr. Snyder (on the ATS Council) and Dr. Swasey of Phoenix were there. . . . The promise that the medical section would be given uninterruptedly in 2½ days was kept, as was the plan to present more papers and panels. The result was A THREE-RING PROGRAM, with two medical sessions and a panel going simultaneously twice a day. Only a man with an iron will, a sponge-rubber derrierre, and twin brothers could have heard it all. . . . A friend and reader of ARIZONA MEDICINE, the gigantic DR. PAUL SAMSON of Oakland, California, was named president-elect of the ATS, and Dr. Howard Bosworth of Barlow San. in Los Angeles got the top NTA post. . . . Most of the data on CHEMOTHERAPY of TB has been reported in this column in the past few months. The value of two drugs (INH and PAS) was emphasized when it was shown that a shift of therapy should be made if sputum is not converted by 16 to 24 weeks, and it is easy to shift when dual therapy is in use. (Triple drug therapy is slightly the best, and can be used if one is aiming at resection at the 'target-point'). . . . Long and daily therapy are best. 'Long' now means 18 months or more. . . . PZA toxicity is apparently not dependent on dosage, and is unpredictable. Serum bilirubin is the best test for hepatatoxicity. . . . Potassium PAS can hardly be as good as claimed, since a lot of superlatives were used. We'll see. . . . CORTISONE may be used for arthritis, dermatitis, etc., in cases of TB if chemotherapy is also given. . . . The MORTALITY from TB has decreased 57% in the past 5 years, but the morbidity is decreasing only 3% per year. The TB HOSPITAL CENSUS is still high in most areas. Cases-at-large need more supervision. 25% of all deaths from TB are still not reported as cases ante-mortem. Single, widowed, and divorced people (for some unknown reason) have mortality rates twice as high as other groups. . . . The x-ray is now considered a less reliable indication of healing in TB than BACTERIAL STUDIES. . . . The relationship of RESISTANCE TO ISONIAZID and a lowered virulence of such cultures is being discussed without agreement. The fashionable bacterial topic is the finding of ACID-FAST BACILLI with low virulence which occur in patients with chronic lung disease and grow in yellowish-orange colonies ("the yellow-bug disease"). . . . Gale and colleagues from Wisconsin reported on 1,150 RESECTIONS for TB (as reported here this winter), and Robinson, Jones, et al., from Los Angeles described the tendency to resection in their 1,839 operations for TB. . . . BCG vaccine is gaining approval of good clinicians but, as usual with BCG, another obstacle has appeared — the possible preventive use of chemotherapy. . . . There is no single solution to 'The Future of SMALL SANATORIA', since they have different financing, different local backgrounds, there are differing needs, etc. The future wisdom of physicians, patients and politicians will modify any trend. . . . HOME THERAPY should be preceded by san care and education, is only for unusual patients and situations, and has too many immediate and late hazards to the patient and contacts.

Treatment of CHRONIC BRONCHITIS, oddly, was a topic of great interest. It was stressed that the patient should be hospitalized for three to five days; smoking banned; bronchoscopy done in most cases; antibiotics given, often by nebulized aerosol; and expectorants, postural drainage, allergic workups used when indicated. . . . "COIN LESIONS" of the lung should be treated by thoracotomy which is relatively safe. Observation and prolonged diagnostic tests are dangerous. Malignant etiology vastly increases with age above 40 years. . . . Chemotherapy of LUNG ABSCESS often leaves residual disease (which figures, but has been minimized by optimists). . . . SIDEROSIS or deposits of iron oxide in the lung, is definitely benign and inert. The lung function is not impaired and the lesions do not progress. . . . FUNGUS DISEASE is more and more commonly diagnosed. Coccidioidomycosis occurs in the southwest and California; histoplasmosis in central U.S. and thereabouts; nocardiosis in the east — and ALL are seen in secondary areas to which people travel or migrate. Laboratory infections have reported from C. immitus, and now 17 lab. infections have occurred from histoplasma cultivation. . . . Spointaneous, recurrent PNEUMOTHORAX is now generally considered to be a surgical problem. It is worth a thoracotomy, and the therapy depends on what is found and who does the op., with resection for a local fistula or bleb, and a parietal pleurectomy to obliterate the space. . . . The outstanding EXHIBITS were possibly on cancer of the lung, and by Trudeau Prize-winner Medlar on TB and bronchiectasis. . . . The outstanding Milwaukee interest in beer is now shared by baseball.

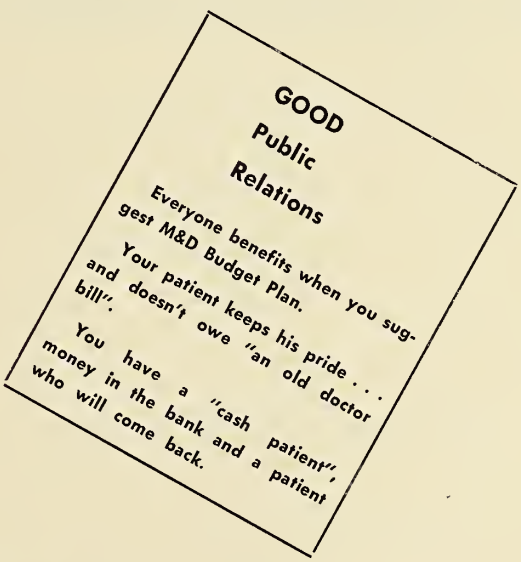
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The big news about TUBERCULOSIS IN ARIZONA is the 'CONTROL' LAW. . . . This controversial legislation ended up with so much support that it couldn't be denied, including such groups as the Arizona TB Ass'n., the PTA, the State Medical Society, some labor unions, many laymen, and many MDs. . . . Tuberculosis 'control' was improbable and a naughty word only a dozen years ago, tho not unthought of. Now it is a reality. . . . It will take time for the situation to 'shake down', and for people to conform, and for the law to be effective. It will be as good as its enforcement, which will depend on the state and local health officers, the physicians, the people, and the judges. . . . Actually the word 'control' can be replaced by 'management'. . . . The law provides funds for a case-finding and therapy program, compulsory isolation for failure to use precautions, some therapy at public expense when needed, and a control officer. . . . Good luck, amigos!

A PHARMACIST friend (who may or may not be typical of the profession) says that there is one publication which strongly dictates what items the pharmacy must stock. They never know until they read it what the public is likely to demand. . . . Would this be the J.A.M.A.? Nope! A druggist magazine? No. The Saturday Evening Post? No, but you're warm. . . . The most influential 'journal' is THE READER'S DIGEST, and even doctors could profit by scanning it to anticipate what some patients are going to ask (or tell).

The intriguing problem of BERYLLIOSIS has come a long way toward solution since the days in 1947 when ARIZONA MEDICINE published one of the first summaries on the subject. . . . Van Ordstrand, a pioneer clinician in the field, describes the progress (much of it his own work) in the Archives of Industrial Hygiene and Occupational Medicine. He reports 490 "beryllium problems". . . . The patch skin-test for beryllium is very specific, and there have been no false positives or negatives in his series. This is due to the probability that berylliosis is an allergic phenomenon, due to individual hypersensitivity. This is the reason why everyone doesn't get it. . . . Steroid therapy has a strong depressive effect on the condition. Since its use was begun four years ago there have been NO deaths in the progressive type of case, compared to a 35% mortality before then.

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REPORT ON ACTIONS OF THE HOUSE OF DELEGATES AMERICAN MEDICAL ASSOCIATION 104th ANNUAL MEETING JUNE 6-10, 1955 ATLANTIC CITY

By J. D. Hamer, M.D., Delegate
Phoenix, Arizona

OSTEOPATHY, medical ethics, medical practices, intern training, hospital accreditation and polio vaccine were among the major topics of discussion by the House of Delegates at the American Medical Association's 104th Annual Meeting held June 6-10 in Atlantic City.

Elected unanimously as president-elect for the coming year was Dr. Dwight H. Murray, general practitioner of Napa, California, who has been a member of the A.M.A. Board of Trustees for ten years and its chairman for the past four years. Dr. Murray will become president of the American Medical Association at the June, 1956, meeting in Chicago, succeeding Dr. Elmer Hess of Erie, Pa. Dr. Hess took office at the Tuesday evening inaugural program in Atlantic City's Convention Hall.

The House of Delegates voted the 1955 Distinguished Service Award of the American Medical Association to Dr. Donald G. Balfour, surgeon, author and researcher of Rochester, Minn., for his outstanding contributions to medicine and humanity. Dr. Balfour has been with the Mayo Clinic since 1907 and he also has been associate director and then director of the Mayo Foundation for Medical Education and Research. His son, Dr. William Balfour, accepted the award for his father at the Tuesday inaugural program.

The Osteopathic Issue

The Reference Committee on Medical Education and Hospitals submitted two reports after considering the recommendations of the Committee for the Study of Relations Between Osteopathy and Medicine. The minority report, which was adopted by the House of Delegates, said:

"One member of the Reference Committee was completely satisfied that an appreciable portion of current education in colleges of osteopathy definitely does constitute the teaching of "cultist' healing, and is an index that the 'osteopathic concept' still persists in current osteopathic practice. Since he cannot with good conscience approve the recommendation that doctors of medicine teach in osteopathic colleges where 'cultism' is part of the curriculum, he respectfully makes the following recommendations to the House of Delegates:

,"1) That the report of the Committee for the Study of Relations Between Osteopathy and Medicine be received and filed; and that the Committee be thanked for its diligent work, and be discontinued.

"2) That if and when the House of Delegates of the American Osteopathic Association, their official policy-making body, may voluntarily abandon the commonly so-called 'osteopathic concept', with proper deletion of said 'osteopathic concept' from catalogs of their colleges; and may approach the Trustees of the American Medical Association with a request for further discussion of the relations of Osteopathy and Medicine, then the said Trustees shall appoint another special committee for such discussion."

The majority report of the reference committee, which was rejected by the House, made the following recommendations:

"Your Reference Committee after a study of the report of the Committee for the Study of Relations Between Osteopathy and Medicine and the study of other evidence submitted is not completely satisfied that the current education in colleges of osteopathy is free of the teaching of 'cultist' healing.

"In view of the desire to elevate the standards of teaching in colleges of osteopathy, your Reference Committee recommends approval of the recommendation of the Committee that doctors of medicine may accept invitations to assist in osteopathic undergraduate and post-graduate medical educational programs in those states in which such participation is not contrary to the announced policy of the respective county and state medical associations. Such teaching services would be ethical.

"Your Reference Committee approves the recommendation of the Committee that the House of Delegates request state medical associations

to assume the responsibility of determining the relationship of doctors of medicine to doctors of osteopathy within their respective states or request their component county societies to do so.

"Your Reference Committee recommends that a committee be appointed at the discretion of the Board of Trustees to confer with representatives of the American Osteopathic Association concerning common or inter-professional problems on the national level."

Change in Medical Ethics

The Reference Committee on Miscellaneous Business dealt with ten resolutions concerning the dispensing of drugs and appliances by physicians. The following committee report was adopted by the House:

"A great many individuals appeared before your committee in the interest of several resolutions submitted to it requesting amendment to or deletion of Chapter I, Section 8 of the Principles of Medical Ethics, and the bulk of your committee's time was spent on this very important and complex matter.

"With reference to this problem, the following resolutions were considered: Nos. 7, 12, 16, 18, 22, 35, 39, 58, 62 and 73.

"Your committee recommends that no one of these resolutions be adopted as submitted but does recommend deletion of Section 8, Chapter I of the Principles of Medical Ethics which now reads:

'OWNERSHIP OF DRUGSTORES AND DISPENSING OF DRUGS AND APPLIANCES BY PHYSICIANS

'Sec. 8. — It is unethical for a physician to participate in the ownership of a drugstore in his medical practice area unless adequate drugstore facilities are otherwise unavailable. This inadequacy must be confirmed by his component medical society. The same principle applies to physicians who dispense drugs or appliances. In both instances, the practice is unethical if secrecy and coercion are employed or if financial interest is placed above the quality of medical care. On the other hand, sometimes it may be advisable and even necessary for physicians to provide certain appliances or remedies without profits which patients can not procure from other sources.'

"You committee recommends that the following be substituted in lieu thereof:

'DISPENSING OF DRUGS AND APPLIANCES BY PHYSICIANS

'Sec. 8. — It is not unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient.' "

In reporting to the House the chairman of the Reference Committee explained that in the opinion of the Committee the Code of Ethics should be stated in broad principles rather than attempt to interpret principles in detail. In recommending the change in Section 8 the Committee emphasized that this section should be interpreted in line with Chapter I, Section 6, which reads: "The ethical physician engaged in the practice of medicine, limits the sources of his income received from professional activities to service rendered to the patient . . ."

Medical Practices Committee Report

The Reference Committee on Insurance and Medical Service, which considered two Board of Trustees reports on the Report of the Committee on Medical Practices, recommended endorsement of the Board's principal conclusions and recommendations. The House of Delegates, however, adopted a substitute motion postponing action until next December. The motion also called for distribution of the entire report of the Committee on Medical Practices to all delegates, so that they can study it carefully before the 1955 Clinical Meeting in Boston.

Internship Approval Programs

The House adopted the following statement presented by the Reference Committee on Medical Education and Hospitals:

"Your Committee has reviewed the report of the Council on Medical Education and Hospitals which includes a summary of the reports previously made to the House of Delegates by the Ad Hoc Committee on Internships and are in agreement with the Council that these conclusions and recommendations are eminently sound and that they should be incorporated into the principles and policies employed by the Council in the conduct of its internship approval programs including subsequent revisions of the Essentials of an Approved Internship.

"Your Committee wishes specifically to reaffirm the following recommendations of the Ad Hoc Committee on Internships:

"1) That a continuing study be made as to what should be the content of an internship;

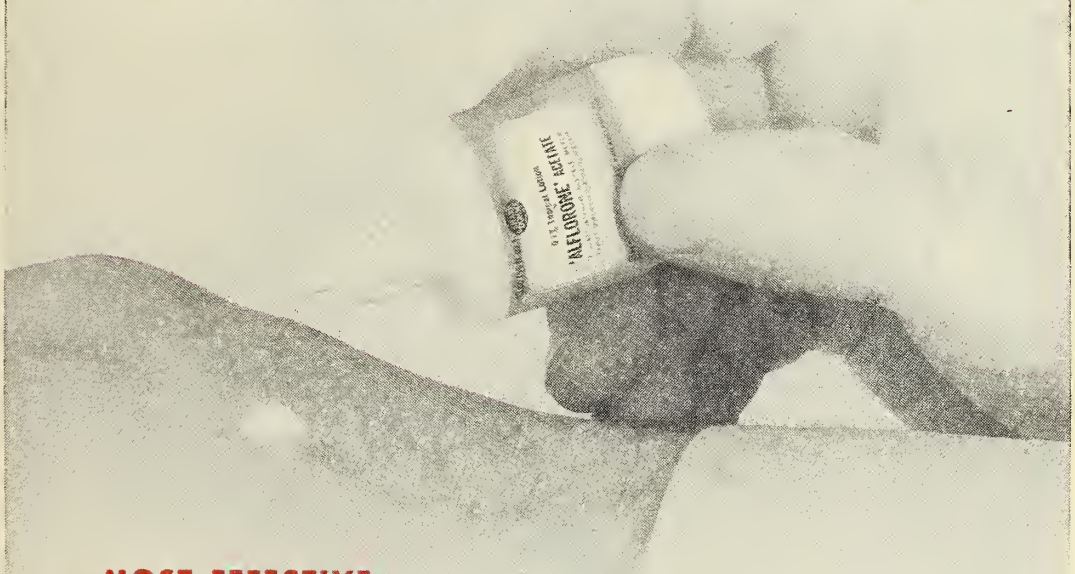
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what constitutes sound clinical experience during the internship year.

"2) That the 'one-fourth rule' be adopted: Any internship program that in two successive years does not obtain one-fourth of its stated complement be disapproved for intern training. It was pointed out to your Committee in the hearings that statistical data compiled for a period of two years indicated that enforcement of this rule would have displaced only a few interns."

Hospital Accreditation

The same reference committee considered six resolutions on hospital accreditation and presented the following statement which was adopted by the House:

"Your reference committee has reviewed all these resolutions which in principle are similar and apparently reflect a widespread dissatisfaction with the present functioning of the Joint Commission on the Accreditation of Hospitals, possibly from bilateral misunderstandings. Therefore, your reference committee recommends that the Speaker of the House of Delegates be requested to appoint a special committee to review the functions of the Joint Commission on the Accreditation of Hospitals to consist of seven members, none of whom shall be members of the Council on Medical Education and Hospitals or the Joint Commission on the Accreditation of Hospitals. This special committee should be instructed to make an independent study or survey and report its findings and recommendations to the House of Delegates at the next annual meeting. All physicians and hospitals are urged to pass on to this special committee any observations or suggestions concerning the functioning of the Joint Commission on the Accreditation of Hospitals."

Polio Vaccine

The House passed three resolutions suggested by the Reference Committee on Hygiene, Public Health and Industrial Health in connection with discussion of the Salk polio vaccine and the introduction of new methods in the treatment or prevention of disease.

The first resolution reaffirmed "confidence in the established methods of announcing new and possibly beneficial methods in the treatment and prevention of disease" and also reaffirmed "the need for the presentation of reports on medical research before established scientific groups, allowing free discussion and criticism, and the publication of such reports, including methods employed and data acquired on which the results and conclusions are based, in recognized scientific publications."

The second recommendation including the following policy statements:

"Resolved, That the American Medical Association go on record as disapproving the purchase and distribution of the Salk polio vaccine by any agency of the federal government except for those unable to procure it for themselves and that such necessary federal funds therefore be allocated to the various proper state agencies for such purpose; and be it further

"Resolved, That the American Medical Association urge the Congress of the United States to allow the Salk polio vaccine to be produced, distributed and administered in accordance with past procedures on any new drug or vaccine."

"Whereas, The physicians of the country recognize the great scientific achievement in isolating and perfecting a vaccine for the prevention of poliomyelitis by Dr. Jonas Salk; and

"Whereas, This vaccine is now being used to prevent poliomyelitis among many of our children; therefore be it

"Resolved, That the House of Delegates express its profound gratitude to Dr. Salk and its admiration for his monumental contribution to medical science."

Miscellaneous Actions

Among a large number of actions on a wide variety of subjects, the House of Delegates also:

Commended the "Medic" television program;

Reaffirmed its previous recommendation that the United States withdraw from the International Labor Organization;

Approved the Headquarters Survey Report, which included the statement that "the only public relations program of any permanent value is the private and public relations of the individual doctor";

Expressed regret that the Hoover Commission saw fit to alter or eliminate some of the recommendations of its Medical Task Force;

Reaffirmed its opposition to extension of the Doctor Draft Law;

Recommended the creation of an A.M.A. Committee on Geriatrics;

Warned against the danger embodied in state legislative proposals designed to restrict the entire field of visual care to the profession of optometry.

Opening Session

Principal addresses at the Monday opening session of the House of Delegates were given by Dr. Walter B. Martin of Norfolk, Va., retiring A.M.A. president, and Dr. Elmer Hess of Erie, Pa., then president-elect. Dr. Martin declared that the basic philosophy of medicine has not changed and "our obligation is to bring the best that medicine can offer to the individual patient." Dr. Hess said that the nation's physicians must become leaders in a campaign to "overcome the ravages of mental illness" as well as in an "intensive campaign to eliminate the needless bloodshed" of traffic accidents.

Inaugural Program

"Medicine's Proclamation of Faith" was the theme of the Tuesday evening inaugural program, which was broadcast nationwide by the ABC Radio Network. Dr. Hess, in his inaugural address, said that "unless we are willing to give of ourselves and our faith, our science will avail us little." Dr. Norman Vincent Peale, eminent clergyman who was guest speaker on the inaugural program, pointed out that "the drawing together of medicine and religion is a step in helping man toward proper use of his God-given potentials and qualifications."

Election of Officers

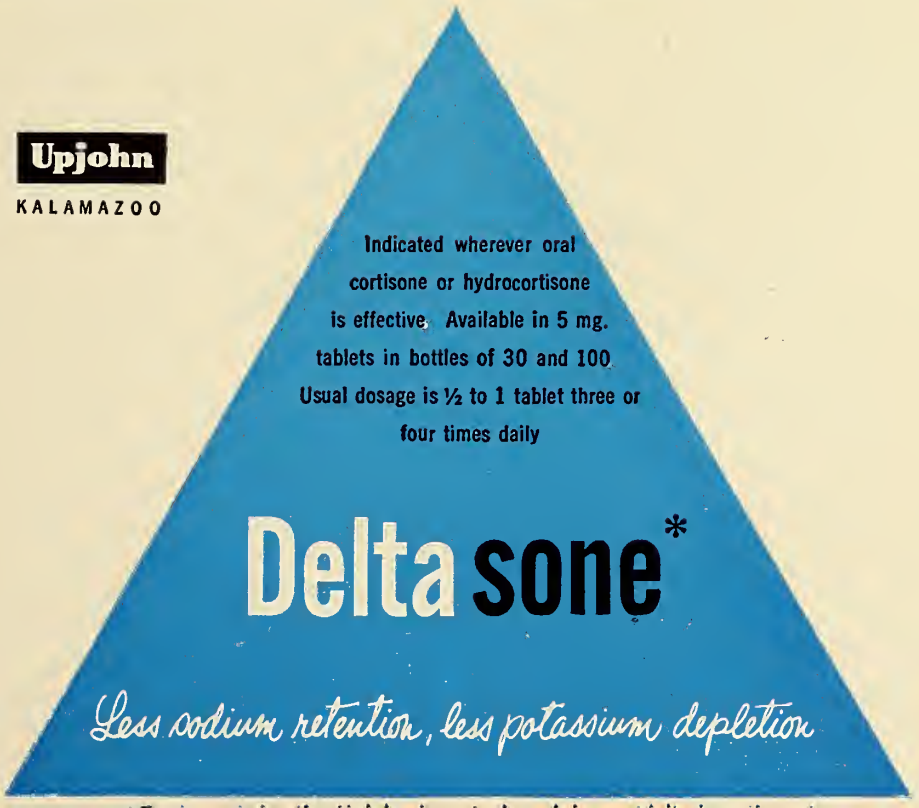
The following officers were elected at the closing session, in addition to Dr. Murray, the new president-elect:

Dr. Millard D. Hill, Raleigh, N.C., vice president; Dr. George F. Lull, Chicago, secretary; Dr. J. J. Moore, Chicago, treasurer; Dr. E. Vincent Askey, Los Angeles, speaker of the House of Delegates, and Dr. Louis M. Orr, Orlando, Fla., vice speaker.

Dr. Gunnar Gundersen, La Crosse, Wis., was named chairman of the Board of Trustees to succeed Dr. Murray. Dr. James R. Reuling, Bayside, N.Y., was elected to fill Dr. Murray's term on the Board. Reelected as trustees were Dr. L. W. Larson, Bismarck, N.D., and Dr. T. P. Murdock, Meriden, Conn.

Dr. Louis A. Buie, Rochester, Minn., was named by Dr. Hess to succeed himself on the Judicial Council. Elected to the Council on Medical Education and Hospitals were Dr. Harlan English, Danville, Ill., and Dr. James M. Faulkner, Boston, the latter succeeding himself. Reelected to the Council on Medical Service was Dr. H. B. Mulholland, Charlottesville, Va. Elected to the same Council were Dr. A. C. Scott, Temple, Tex., and Dr. R. B. Chrisman Jr., replacing Dr. Orr.

Dr. B. E. Pickett Sr. C,arrizo Springs, Tex., was reelected to the Council on Constitution and Bylaws, and Dr. Warren Furey was named to the same Council to replace Dr. James Stevenson, Tulsa, Okla.



LETTERS TO THE EDITOR

Nelson D. Brayton, M.D.
32 Keystone Avenue,
Miami, Arizona

Dr. R. Lee Foster, Editor
Arizona Medicine
Phoenix, Arizona

In a recent conversation you expressed some interest in the doings of the recent legislative session. As a member of this legislature, I am putting into this letter a summary of the bills of medical interest, together with possible proposed legislation of the future and other comments and reactions. You are at liberty to publish this in your "Letters to the Editor" column.

The tuberculosis control bills: In all, four different anti-tuberculosis bills were introduced in the Twenty-second Legislature. The mimeograph machine certainly worked overtime on these respective measures.

The first one of these measures, the famed Senate Bill No. 20, generally known as the Salsbury Bill, and pressurized by the Legislation Committee of the Arizona Medical Association, never got to first base. Its failure was due to three different causes. (1) Pressurizing of a legislature by a scientific society, The Medical Association, always a dangerous thing for any kind of scientific association to attempt. (2) A feature in the bill which deprived an individual of his personal liberty and which caused many a discussion of policing power being delegated to any board of health, with privilege of arrest, to sentence in superior court any individual simply because he is unfortunate enough to be sick. (3) Removal of authority from the county level. The Salsbury Compulsory Isolation Bill perished from malnutrition after sixty days of starving for support.

The second bill, House Bill No. 216 or the Brayton-Thode Bill, on which a public hearing was held by the Health Committee in the chambers of the Supreme Court and which was announced by radio and press, was commended by Dr. Robert Anderson of the United States Public Health Service. Doctor Anderson was flown here from Washington, D.C., by the Surgeon-General of the United State Public Health Service. This bill, favorably commented on by Doctor Anderson, removed the "arrest" clause in Senate Bill No. 20 and placed the tuberculosis control on a county level. It also respected all present laws now in the code and the rules and regulations of the State Department of Health, which are sufficient at the present time to quarantine tuberculars. It perished in a caucus.

The third tuberculosis control bill was introduced in the Senate as Senate Bill No. 200. This bill had all the basic features of House Bill No. 216. It perished in the Senate.

On the 80th day, a fourth bill was introduced in the Senate by giving a hypodermic to the dying body of Senate Bill No. 20. A piece of major surgery was performed in which everything was stricken below the title of the bill. The practicality of House Bill No. 216 (The Brayton-Thode Bill as amended) was recognized and substituted for the corpse of Senate Bill No. 20. Revivified, it was passed by the Senate unanimously and sent to the House where two major amendments were added. These amendments removed the zero hour of computation as to when aid should be given by the State to the respective counties — from 127 that day's population in Maricopa County; 17 in Pinal County; 3 in Gila County; 65 in Pima County, etc. These restricting compilations were removed by the legislative conference committees and the appropriations adjusted. The bill then received unanimous endorsement by both the House and Senate.

The passage of this bill in the closing hours only after extensive deliberation shows that pressurizing, and restrictions on the personal liberties of individuals, by an overzealous department of health has no place in the thinking or practice of the Arizona Legislature. Moreover, it is of peculiar interest that never once was the question of finance raised in this unique picture except to raise the amount suggested by the State Department of Health by half again. The bill passed with the emergency clause.

The Anti-Smog Bill, House Bill No. 213, was a measure designed to protect the residents and tourists of the Salt River Valley from noxious fumes and gasses such as exist at times in the Los Angeles area. It was designed to prevent, not cure, smog and did not affect already existing industry. To say this bill failed to receive any support from the bankers and real estate men of Phoenix, who want the usufruct from new industries for their business, is putting it mildly. It is properly the business of the Maricopa County Medical Society to see that such a bill is introduced in the next session of the legislature. I wonder if they will wake up and do so. I leave that membership this thought — the way to cure smog is to prevent it. Air-pollution of the Salt River Valley is a serious problem.

House Bill No. 242, like the one following was prepared by the attorneys of the Legislative Council. It brings into review the attitude of physicians who have received their medical education in whole or in part through the United States Government, and who have then refused to enter the services because of their ability to **direct** and **control** a friendly draft-deferment board. This bill failed because of constitutional questions involved. Reintroduction of some similar measure is contemplated, since Arizona has such physicians who are enjoying lucrative practices and who have **not** fulfilled **and will not fulfill** their obligation to the government that educated them.

House Bill No. 113 was designed to protect counties in their collection of accounts receivable from hospital patients. These accounts run into thousands of dollars in Arizona. In Pima County alone the figure for 1954 was over $89,000. Proportionate similar accounts occur in other counties where

physicians use the facilities constructed by taxation of either a city, county, or state for their own economic advantage. This bill provoked statewide opposition, especially in Pima County.

House Bill No. 73, The Silicosis Bill, for increment in industrial compensation, was designed to protect the widow or individual afflicted with permanent debilitating silicosis and passed both houses without opposition. It raised the amount of industrial liability from $5,000 to $7,500 and smaller side amounts.

House Bill No. 154, the Basic Health Code Law, which had the endorsement of the Health Committee within fifteen minutes from the time it was explained by the State Department of Health, failed to pass in another committee, why, I do not know. It will be presented again in the next session.

House Bill No. 94, the Premarital Examination Act, failed to pass. A delegation from Yuma, where over 15,000 marriages are said to occur yearly, strongly protested this bill.

House Bill No. 31, the Midwife Bill. Despite the fact that 703 births were reported by midwives last year, this bill failed to pass. The present fee to become a midwife is twenty-five cents. The bill as amended would have increased this to a yearly rate of one dollar and a State Department of Health fee of five dollars. This bill, when it is presented again, deserves some interest from the profession.

House Bill No. 90, the Codeine Bill, permitting refilling of a prescription containing codeine by telephone request and modeled after the new revised federal law, should elicit the interest of the profession. It passed without dissention.

House Bill No. 251. This was a bill introduced by myself to accord limited licensure to physicians not now legally permitted to practice in certain institutions or health organizations, and whose right to such privileges is debatable, according to the new ruling of the Attorney-General. The bill had a stormy session in the House, as it would have excluded the necessity for the Superintendent of Public Health and his assistants and the Superintendent of the Insane Asylum and his physicians to take the basic science. Squeaking through the House it passed the Senate with further amendments, which the House Conference Committee refused to accept. It will be reintroduced at the next session.

House Bill No. 26. The Naturopathy Bill. This bill was quickly disposed of by a special committee appointed by the Speaker of the House. The naturopaths' "open the door" amendments to the code law were not accepted; the law remains the same as before the session.

There may be other bills of interest to the profession. The main ones have appeared and been emphasized in these final paragraphs. The Anti-Smog Bill is bound to be re-introduced, so let the Maricopa Medical Society beware. Besides the bills previously mentioned, bills may be introduced on brucellosis; pest diseases of vegetables, fruits, and essentials in eating; various cults and allied health conditions such as pertain to cosmetologists, nurses, midwives, barbers, etc.; dispensation of sulfa drugs, antibiotics, and similar remedies by druggists; poisoning by insecticides and termite exterminators; and even potato pests or fluorine in city water supply, etc. These all refer to the "Health and Welfare of the State of Arizona". They are all introducible.

In fact, if one wants a liberal education he should permit himself to be elected to the Arizona State Legislature. He will find it anything but a vacation or a soft, easy job. And he will also find that the legislators sitting two seats away from him are just as bright, just as courteous, just as quick on the trigger, and just as intelligent as he thinks he is. And he may be more than right. It is a liberal education for any physician, and I was certainly glad that I had had previous experience in a legislative body.

Finally, a few words of friendly criticism to the Arizona Medical Association. Never, never try to pressurize a legislature — the way to a legislative heart is through personal informative discussion, as most legislators look upon collective medical society opinions with suspicion. This is a fact that cannot be ignored.

And concluding this thought. No one special bill introduced into a legislature which might hit the "financial funny bone" of a few doctors, but **all** bills affecting the medical profession and members of the Arizona Medical Association, should be mimeographed and forwarded to **every** member of the Arizona Medical Association.

Education and fair play are still the basic rudiments of our national greatness!

Sincerely yours,

Nelson D. Brayton, M.D.
Chairman of the Health
Committee
House of Representatives
Twenty-second Arizona
Legislature

LEGISLATOR PRAISES EXECUTIVE SECRETARY

This letter came to our attention recently and seemed of sufficient interest to bring to the attention of our members. We therefore obtained permission to publish it. — ED.

April 25, 1955

A. I. Podolsky, M. D.
Chairman, Arizona Medical Examiner's Board
1601 5th Avenue
Yuma, Arizona

Dear Dr. Podolsky:

Having been elected by the citizens of Yuma County for four consecutive terms to represent them in the Arizona State Legislature, one term in the House of Representatives and now serv-

ing my third term in the Senate, and having always been friendly to the fine, high profession you represent, I unhesitatingly and voluntarily write this letter regarding Mr. Robert Carpenter.

If all persons with whom legislators come in contact conducted themselves in the splendid and outstanding manner in which Mr. Carpenter conducts himself and carries out his program of work as it relates to legislation, the problem of the legislature would be greatly simplified and the results tremendously enhanced. It seems that during this past first session of the Twenty-Second Legislature there were a few more matters in which the medical profession was interested than usual and they were of greater significance. The many comments which came to my attention regarding Mr. Carpenter's ability and outstanding conduct were unusual. His knowledge of the subject matter and his approach permitted him to be welcomed whenever he came to the State Capitol and I noticed that several members of the legislature who had become acquainted with him stopped him in the corridors or called him into the Senate chambers during recess in order to expedite whatever program he was working on and to facilitate his work.

There have been many criticisms in the past about people who attempt to influence legislators regarding legislation, none of which can apply to this gentleman. I wish it were possible for him to "give lessons" to some with whom we have to contend.

Knowing that his efforts with the legislature are merely a part of his employment, I thought it proper to commend his efforts to his employers.

If at any time I can be of assistance to help further the program that you have been carrying on for the benefit and the protection of all of our citizens, please do not hesitate to call on me.

Sincerely,

HCG:dbl

Harold C. Giss

ee: M. R. Riehter, M. D.
Carl H. Gans, M. D.
Harry T. Southworth, M. D.
Orin J. Farness, M. D.
Robert Carpenter

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In Memorium

THE sudden death of Dr. S. S. Scholpp on June 4th, from cardiac occlusion, was a great shock to his confreres, patients and a host of friends in Phoenix and vicinity. Although a comparatively recent addition to the medical fraternity of Maricopa County, he had won the respect of his associates and confreres and the love and admiration of his patients to an unusual degree, due to his ability to combine the science of medicine and the art of medical practice with a sympathetic and warm hearted personality. Dr. Scholpp was born in Rochester, N.Y., January 28, 1899, so that he was only fifty six years of age at the time of his unexpected death. He graduated from Yale University in 1924, and was an instructor in history for some years. He then turned to medicine and took his M.D. degree from University of Chicago Medical School in 1938. His internship was at St. Luke's Hospital in Milwaukee, followed by a residency in Park Avenue Hospital, Rochester, N.Y. He engaged in private practice in Rochester for two years and then enlisted in the Army Medical Corps, where he served from August, 1942 to May 1946, part of the time in Italy. He was discharged with the rank of Major and entered the Veterans Administration for more surgical training. He was with the Veterans' Hospital in Temple, Texas, for eighteen months, on the services of general surgery and urology. He then went to the Veterans' Hospital at Biloxi, Miss., where he was chief of surgery for a time and re-opened their department of urology. He returned to private practice in Lake Charles, La., from 1948 to 1951, and in February of 1952 he located in Phoenix in association with Dr. Chas. N. Ploussard. Dr. Scholpp was a member of the International Academy of Proctology (1953) and was a Fellow of the American College of Gastroenterology (1954), in addition to his memberships in the county, state and national organizations.

Dr. Scholpp was married on March 20, 1932 to Annabel Solem, prior to his decision to study medicine. One son (Forest), now twenty-one years of age, has just graduated from Stanford University.

An outstanding characteristic which endeared Dr. Scholpp to his patients was the genuine personal interest he took in them. To each of them he was friend and counselor, as well as physician or surgeon. The emotional needs of his patients interested him as much as did their physical ailments. The high principles of the Hippocratic Oath were carried into his daily practice and the well-being of his patients, whether this was psychic or physical, was his chief concern, monetary remuneration being secondary. A variety of interests outside of his daily practice brought him into contact with many friends. He was an accomplished pianist and gave private recitals for his friends on several occasions. He was an artist of some ability and enjoyed most painting birds in water colors. He was active in the dog clubs of Phoenix and Mesa, and was the proud possessor of four great Danes, one of whom was a champion. These interests, however, were not allowed to interfere with his close and constant contact with his patients, for whose welfare he lived. The burden of this sympathetic contact with many patients doubtless contributed to the cardiac accident which was the immediate cause of Dr. Scholpp's death. He is survived by his wife and son.

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Norman A. Ross, M.D., Phoenix, Arizona

"SPLINT 'EM WHERE THEY LIE"

THE Following telegram shows that the Senior Senator from Arizona applies this old surgical axiom in his support of public health measures. The Sells Tuberculosis Hospital for unstated reasons was not a part of the budget of the Public Health Department as submitted for consideration by the Committee on Appropriations. The telegram which follows is the result of calling this matter to the attention of the Senior Senator:

"SENATE COMMITTEE ON APPROPRIATIONS HAS RECOMMENDED THAT $250,000 BE MADE AVAILABLE DURING FISCAL YEAR 1956 FOR DRAWING PLANS AND SPECIFICATIONS FOR BEGINNING CONSTRUCTION OF A FIFTY-BED HOSPITAL AT SELLS"

CARL HAYDEN

* * *

ARIZONA TUBERCULOSIS & HEALTH ASSOCIATION, 111 East Willetta, Phoenix, Arizona.

At the request of the Arizona Tuberculosis and Health Association, four members of the staff of the National Tuberculosis Association, recently completed a study of the Tuberculosis Association's program as related to the tuberculosis problem in Arizona. Simultaneously, a team of five from the Tuberculosis Division, Public Health Service, U. S. Department of Health, Education and Welfare, at the request of the State and local Health Departments, studied the problems from the official agency point of view in Maricopa and Pima counties. The findings of these two groups and their joint recommendations are expected to pin point back immediate and long range activities necessary to control tuberculosis in Arizona.

Among the immediate activities, this developing out of the U. S. Public Health Survey, is the study of the present status and the non-hospitalized tuberculosis patients known to the Health Department of Phoenix and Maricopa County. The objectives of this study, being made by these Health Departments with the cooperation of the Public Health Service and the Maricopa Planning Committee of the Arizona Tuberculosis and Health Association (the Tuberculosis Association is underwriting this study) are:

"a. To provide general and specific information regarding the types and care and services actually provided non-hospitalized active tuberculosis patients.

b. To study the characteristics of the cases which are and are not receiving supervision.

c. To provide information regarding the number of known active cases and the reason why they are not hospitalized.

d. It should also indicate the extent of needs for hospitalization and adjustments which may be needed in the kinds and amount of services for patients at home.

To conduct this type of study, a questionnaire was prepared (by Public Health Service) to collect information on each tuberculosis patient selected under the criteria established for the study. Most information regarding these patients is available in the existing records of health departments (case register, nurses' and clinic records, etc.), however, in many instances, this information may be incomplete or not current. To be able to collect most current information on these patients there may be need for the health departments (usually the public health nurses) to call or contact many of the physicians in the community. The physicians' cooperation is essential, if this fact finding study is to assist the health departments with the evaluation of their tuberculosis problem and needs, and with the solution of the problem".

* * *

ARIZONA SOCIETY FOR THE BRAIN INJURED, 1510 East Camelback Road, Phoenix, Arizona.

Immediate plans are for starting the preparatory and plan drawing work on the Perry Institute for Brain Injuries, which we hope will be in the building stage during 1955-56.

We are preparing and during the summer the Society hopes that children applying for school attendance for next year and children being re-

ferred by doctors for service through the Society will be screened and service planned for them for the coming year.

For the coming school year the Board of Directors of the Arizona Society for Brain Injured intend to employ a special teacher who has had both training and experience in working with brain-injured and mentally retarded children. (Our volunteer teachers this year did an exceptionally fine job with the social classes, and several of them expect to remain with us as teachers' assistants). In such a program no more than three children will be together in a group. This is the ideal situation for training the brain-injured child.

Our teacher is to begin educational research projects in the very near future.

A report on the 1954-55 social classes for brain-injured:

1954-1955 Social Classes for Brain-injured children:

Total Children in attendance	34.
Average daily attendance	16.8
Total class hours	284
Total children in class hours	4649

Parents serviced:

Total parents serviced	71
Total in parents classes	32
Total in parents discussions	71
Total no. of individual parent conferences	285

Parent volunteers:

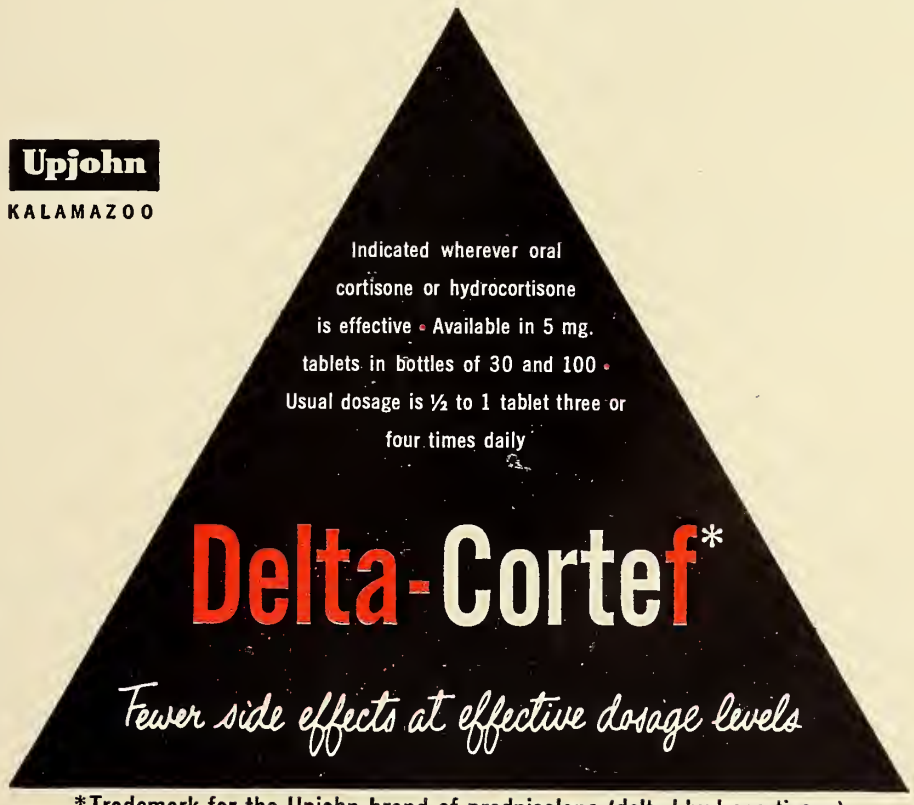
Total number	26
Total lunch hours volunteered	264
Total school hours volunteered	281
Total transportation hours volunteered	176
Total mileage volunteered	27,716

Lay volunteer workers:

Total number of volunteers	27
Total school hours volunteered	1528
Total preparation hours volunteered	506
Total mileage volunteered	234

* * *

The following quotes from a letter addressed to the Blue Shield-Blue Cross of Arizona reminds us that we should look closely and determine the type of policies our patients have purchased from this organization whether they



be employed interstate or locally before saying "sorry this policy doesn't cover":

Quote:

"Some of our larger groups have extended coverage through **Health Service and Medical Indemnity of America.** These two organizations are stock companies wholly owned by all the Blue Cross and Blue Shield Plans in the country. **Payment for office calls and office surgery are made by these plans.**

There is no intent to provide service benefits for any services rendered which would fall under the terms of these Contracts, no matter what the patient's income is."

* * *

BETTER SCHOOLS, A Clearing House for 1955's Education Conferences, Vol. 1, No. 4, June 2, 1955, in an article on Page 6, "Schools Try Special Aids for Gifted". We quote: "Dr. Ruth Strang in the May NEA Journal concludes, " " The educational needs of gifted children may be best met, it seems to me, in regular public school classes plus some additional classes and extra-class and **community activities**" ".

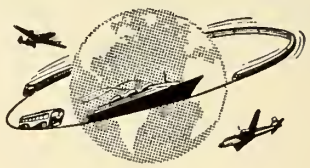
As physicians and parents we ask, "Whose children aren't gifted?" Are we contributing all we can to community activities directed toward integrating the child and youth in our towns?

Community activity is now the child's only outlet. School is out.

* * *

Of interest statewide is the notice from the Maricopa County Medical Society of a new policy on pre-camp health examinations. The examination, a screening type, is to be conducted by any and all members of this society without charge.

Only members of approved YOUTH agencies are accorded the privilege of these free screening type examinations. Boy Scouts, Camp Fire Girls, Girl Scouts, Y.M.C.A. and Y.W.C.A. have been approved as of May 16, 1955. All children for whom this examination is requested must bring the examination form with them. Whether the form has been reproduced on a card or paper, it will bear the name of the MARICOPA COUNTY MEDICAL SOCIETY, and indication that this is a screening type of examination, the name of the Agency and the signature of an Agency representative.



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Notes from the EDITORS PEN

AMA ANNUAL MEETING

Registration at the 104th Annual Meeting of the American Medical Association held in Atlantic city, New Jersey, June 6th through 10th, totalled 26,767, including 11,403 physicians registered to 4 p.m., Thursday, June 9. From Arizona included: CHANDLER — Robert G. Delph, M.D.; PHOENIX — Alfred D. Blanchet, M.D., Jesse D. Hamer, M.D. (Delegate), Marriner W. Merrill, M.D., Ashton B. Taylor, M.D. and our Executive Secretary, Robert Carpenter; PRESCOTT — Clarence E. Yount, Jr., M.D. (Treasurer) and Florence B. Yount, M.D.; SAFFORD — Robert S. Keller, M.D.; SELIGMAN — Edward J. Gungle, M.D.; SUPERIOR — Howard W. Finke, M.D.; TUCSON — Philip G. Derickson, M.D.; Donald F. Hill, M.D.; W. Paul Holbrook, M.D.; Oscar S. Koenig, M.D.; Clarence H. Kuhlman, M.D.; Raymond F. Oyler, M.D.; Delbert L. Secrist, M.D.; Henry J. Stanford, M.D.; Arie C. Van Ravenswaay, M.D.; Marguerite S. Williams, M.D. and Elmer E. Yeoman, M.D.; and YUMA — James Volpe, M.D.

Dwight H. Murray, M.D., Napa, California, former chairman of the Board of Trustees, elected unopposed PRESIDENT-ELECT; Gunner Gundersen, M.D.; La Crosse, Wisconsin, named BOARD CHAIRMAN; Millard D. Hill, M.D., Raleigh, N.C., elected VICE PRESIDENT; E. Vincent Askey, M.D., Los Angeles, elected SPEAKER OF THE HOUSE; Louis M. Orr, M.D., Orlando, Florida, elected VICE SPEAKER OF THE HOUSE, James R. Reuling, M.D., Bayside, N.Y., former Speaker of the House, elected MEMBER OF BOARD OF TRUSTEES to fill unexpired term of Dr. Dwight H. Murray; Thomas P. Murdock, M.D., Meriden, Conn., and Leonard W. Larson, M.D., Bismarck, N.D., elected to succeed themselves as MEMBERS OF BOARD OF TRUSTEES. Re-elected were George F. Lull, M.D., Chicago, SECRETARY, and J. J. Moore, M.D., Chicago, TREASURER.

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CONFERENCE OF PRESIDENTS

The eleventh Annual Meeting of the Conference of Presidents and other Officers of State Medical Associations, held June 5, was well attended. Presentations included: "My Experiences Practicing Under England's Social Medical Plan" by James R. Fox, M.D., Minneapolis, Minnesota; "The Backdoor to Socialized Medicine" by Honorable John W. Bricker, Senator from Ohio, author of the Bricker Amendment; and "I Led Three Lives" by Herbert Philbrick, New York, author of the book of similar title.

DISTINGUISHED SERVICE AWARD

Donald G. Balfour M.D., Rochester, Minn., was selected by the AMA House of Delegates as the 1955 recipient of the Association's Distinguished Service Award. In 1956 Arizona will submit its nomination presently being considered by Council.

AMEF AWARD

Received by Jesse D. Hamer, M.D., Delegate, in behalf of the association, was an Award of Merit to the Arizona Medical Association, by the American Medical Education Foundation, for its outstanding contribution (1954) to the preservation and continuance of the high standards of medical education in the United States of America.

The Woman's Auxiliary to the American Medical Association presented the AMEF with a contribution totalling $80,000.

AMA — LABOR — MANAGEMENT

Dr. Elmer Hess, President of the AMA heads a new committee appointed by the Chairman of the Board of Trustees, to meet with representatives of labor and management in a joint effort to understand and help solve some of the medical problems that are associated with working people. He said, "there are areas, particularly in the field of preventive medicine, where the time is right for realistic discussion of the issues." This committee offers great possibilities for determining whether attitudes on many of the vexing health problems are irreconciable or offer a genuine opportunity for mutually helpful activity. Other members include: James R. Mc Vay, M.D., Kansas City, a member of the Board of Trustees; Joseph D. McCarthy, M.D., Omaha, chair-

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man of the Council on Medical Service, and William P. Shepard, M.D., New York, chairman of the Council on Industrial Health.

DOCTOR DRAFT OPPOSITION

American Medical Association witnesses in testimony June 9 to Senate Armed Services Committee strongly opposed any further extension of the doctor draft law and called on the Defense Department to set up machinery to solve the long-range problem of procuring career medical officers. It was declared: (1) previously submitted Defense Department figures to House Armed Services Committee fail to back up need for extending the draft, (2) its continuation can't be justified except as means of replacing career officers who are leaving in large numbers, (3) set up a joint military-civilian committee to work out an effective officer procurement program, and (4) in the interim, to help stem officer resignations, continue $100 a month special pay. AMA is making all out effort to prevent extension of the doctor draft law for another two years. WRITE YOUR SENATORS AND REPRESENTATIVES in support of this logical position.

DEATH CERTIFICATES — NATUROPATHS

Robert Morrison, Attorney General of the State of Arizona, under date of April 1, 1955, rendered an opinion concluding that: "A naturopath is authorized under the laws of Arizona to sign a death certificate." The matter is being given very careful scrutiny by Council of your Association and legal representative to determine course of action as may be indicated.

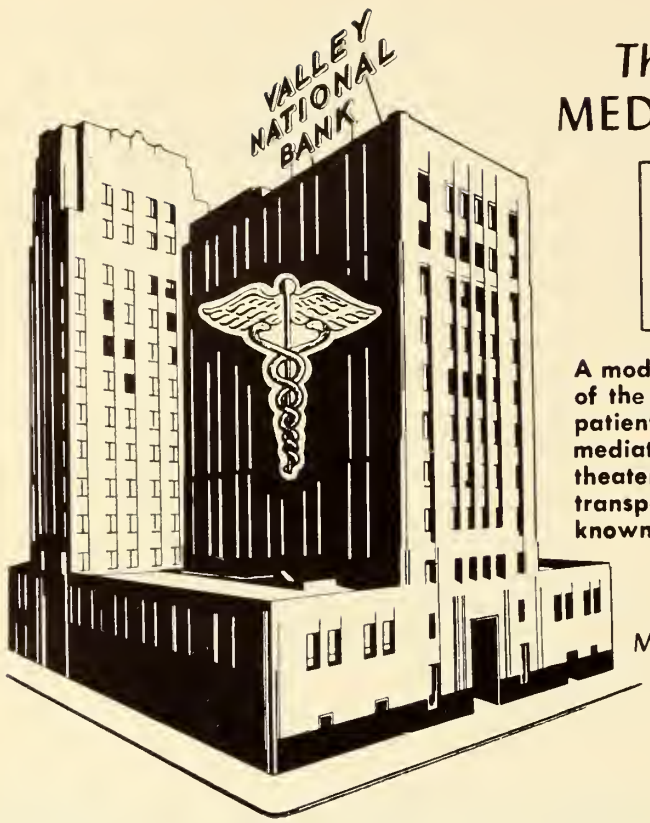
FOREIGN GRADUATES EVALUATION

Of major concern to all those organizations, including the Council on Medical Education and Hospitals of the American Medical Association, the Association of American Medical Colleges, Federation of State Medical Boards of the United States of which your Board of Medical Examiners of the State of Arizona is a part, and American Hospital Association, engaged in the fields of education and licensure, is the foreign graduate problem.

The evaluation of the professional competence of physicians trained in foreign medical schools presents a problem even more difficult than that relating to our American trained physician for the reason that adequate data regarding the teaching program of many of the foreign medical schools are not available. Evaluation procedures even more searching than those presently in use with American graduates will have to be developed if the competent physicians are to be culled out from the incompetent ones with little or no reference to their medical school origin. With both medical education and methods of medical examination in active transition and with the United States having become the mecca for foreign physicians seeking advanced training, the need is obvious — medical educators and medical examiners must counsel together, plan together and work together in order to meet the changing needs in an effective and well-coordinated manner.



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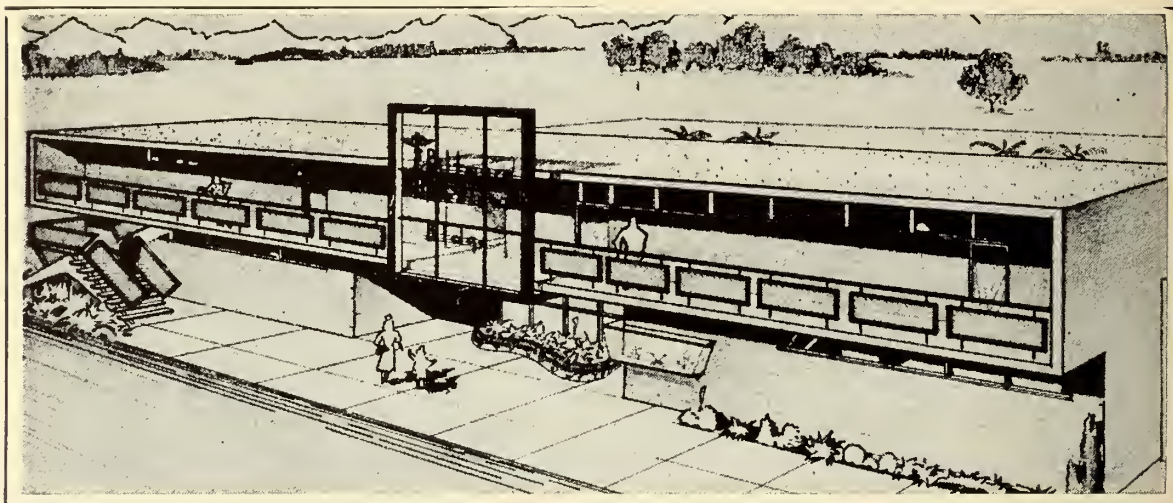
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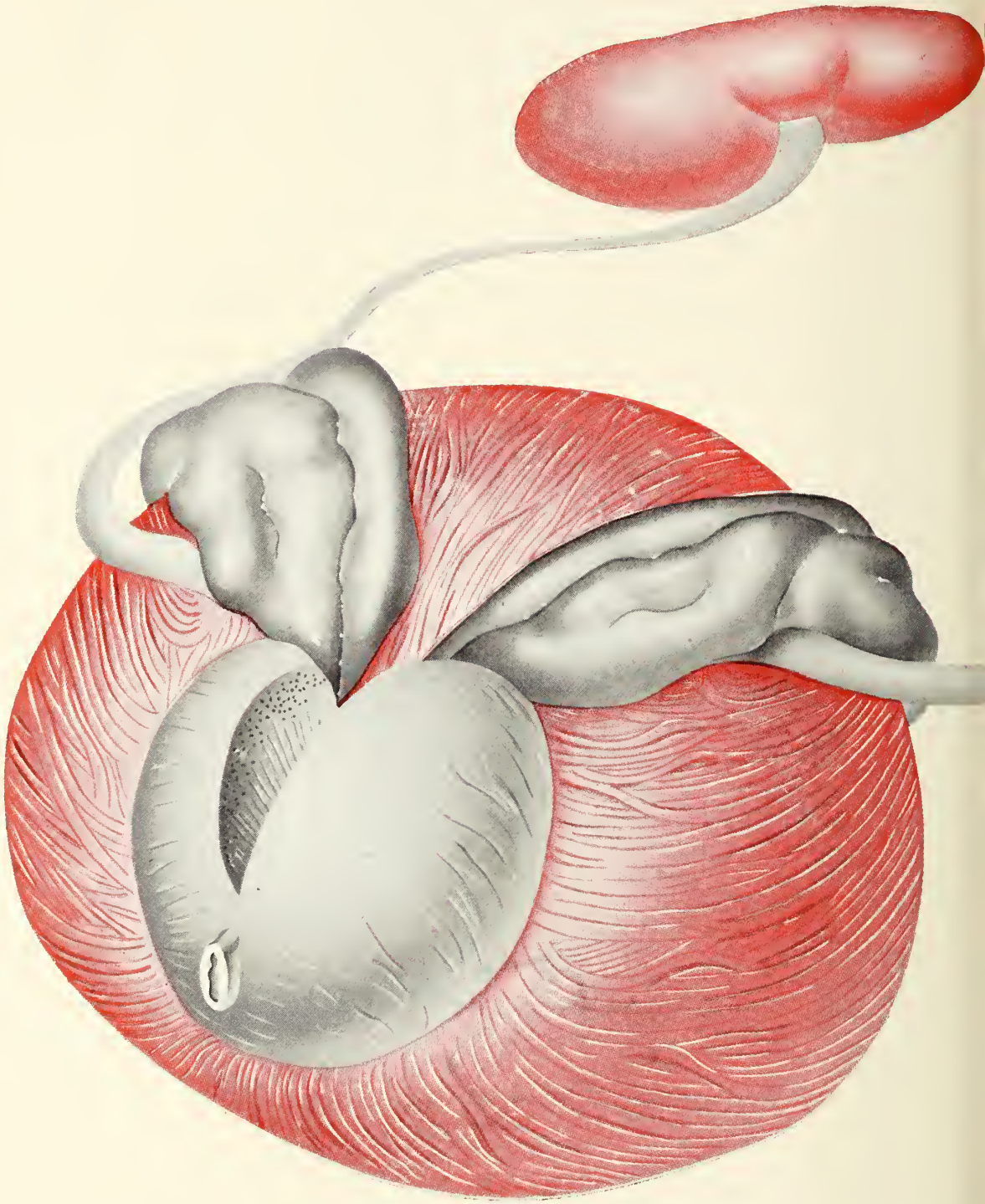
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ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 12, NO. 8 AUGUST, 1955

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Civil DEFENSE

PREFACE AND ACKNOWLEDGMENTS

THE following articles represent a manual on the medical care of mass casualties with particular reference to injuries and medical problems which may occur as a result of the weapons of modern warfare. This symposium is presented as a project of the Civil Defense Advisory Committee of the Arizona State Medical Association through the kind cooperation of ARIZONA MEDICINE and its editor Dr. R. Lee Foster. It is made possible by the generous efforts of the authors, the members of the Civil Defense Advisory Committee, civil defense authorities, and the staff of ARIZONA MEDICINE.

You will notice the format of these articles is designed to allow easy removal for filing purposes. If you have not already done so please prepare a file on mass disaster and emergency care subjects including information pertinent to civil defense in your area. This should be pursued by all physicians regardless of practice or location.

The material presented in this manual is intended only to delineate the essential facts. For further reference and for inclusion in your file please note the reading list on pages 388-389-390. Also more detailed supplementary articles will appear in ARIZONA MEDICINE from time to time. Watch for them.

Remember the ready availability of this data may enable you to save many lives. *It can happen.* Don't be caught with your information down!

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MEDICAL ASPECTS OF NUCLEAR WEAPONS

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TO CONSIDER the Medical Aspects of Special Weapons it must be remembered that our data as to the effect and patient treatment arise almost entirely from the now obsolete nominal blasts of Hiroshima and Nagasacki. The Atomic Energy Commission has improved upon these; the Russians have also.

There are three major categories of injuries sustained as the result of Atomic Warfare: (1) Blast Injuries, (2) Burns, and (3) Injuries which are the result of ionization.

1. Blast injuries are probably the most significant. They are the result of a primary blast which is a violent wind that lasts for approximately one second. There is then a secondary blast and finally the effects of falling debris. These blast injuries account for 70% of the total injuries sustained and require immediate treatment.
2. The thermal injuries result from a primary flash which injures most of the people within a radius of one-half mile of ground zero; but there are few injuries beyond two and one half miles. Combat clothes, in themselves, will protect against much of the effect of the primary flash. Secondly, there are the thermal injuries sustained from the true flame, as associated with any detonation. Thermal injuries account for 70% of the total injuries sustained and they too require prompt treatment. Again it is to be noted that these distances refer to the initial type of nominal blast bombs and are totally incorrect for the present hydrogen bombs.
3. Ionization radiation and its damaging effects accounts for 30% of the total injuries sustained. These percentages are listed with the realization that most of the patients will have a combination of injuries. Ionization effect will account for approximately 15% of the deaths, although it will influence the handling of about 30% of the patients. This group does not require immediate treatment other than caring for primary shock.

Ionizing radiation presents two types of exposure:

1. The internal exposure which results from inhaling contaminated dust or the taking in of irradiated water or food.
2. External exposure which is the usual form of radiation to be considered.

Ionizing radiation is made up of the following fundamental factors:

1. The Alpha particle which is the Helium atom and which presents no external hazard since it has a penetrating power of only 0.01 centimeter; however it presents a tremendous internal hazard for its ionizing effect is about 10,000 times as great as that of gamma rays.
2. Beta particles or electrons, will penetrate about 0.2 centimeter. They have an ionizing power approximately 100 times that of gamma rays. Consequently, they are a hazard both internally and externally.
3. Gamma rays are the major external hazard. They have no charge, but will penetrate several centimeters and make up approximately 3% of the total released nuclear energy. One half of this activity is received in the first first second, almost all of it is produced within 60 to 90 seconds after fission has taken place.
4. Neutrons also have a penetrating power of several centimeters and have about eight times the ionizing power of gamma rays. They are fundamentally hazardous for only a fraction of a second.

With an exposure from these various ionizing

factors of approximately 200 roentgens some of the people will die; with an exposure of about 400 roentgens, approximately 50% mortality is expected; and finally, for the group that receives about 600 roentgens or more there will be almost 100% mortality.

RADIATION PATHOLOGY: Tissues in themselves vary greatly in their sensitivity to irradiation. The most sensitive ones are: (1) the blood-forming organs, (2) the mucous membrane of the gastro-intestinal tract and (3) the germinal epithelium.

Clinically with whole body radiation the prime changes are:

1. Damage to the blood-forming organs which results in aplastic anemia, agranulocytosis, and thrombocytopenia.
2. Secondly, there is damage to the gastro-intestinal epithelium which in turn causes severe dysentery in association with nausea, vomiting, and hemorrhage. It is from the lower bowel with its denuded surface that endogenous infection becomes a real problem.

The symptomatology in man after exposure to irradiation is somewhat variable depending upon (1) the degree of exposure, (2) the range which varies in intensity decreasing with the square of the distance and (3) individual variations of the patient.

The signs and symptoms of the radiation syndrome can possibly be broken down into the following segments:

1. A shock reaction which usually occurs about one to two hours after exposure.
2. A latent period during which there may be no definite symptoms and which may last from four to fourteen days.
3. A phase of infection and toxicity which will vary from about six to thirty-five days.
4. Problems of hemorrhage which usually occur between the twelfth and thirty-fifth day.
5. Anemia and malnutrition which develops about the twentieth day and can persist from then on.
6. A prolonged convalescence.

The gastro-intestinal response can vary markedly. Within a few hours after exposure to ionizing radiation there may develop anorexia, nausea and vomiting. This may persist for one to forty-eight hours and then the latent period develops. The duration of this latent period is of considerable prognostic importance. The shorter the latent period, the more severe the recurrent anorexia, nausea, vomiting and diarrhea. Later there is a discharge of mucous and blood from the various body orfices, possibly with secondary hemorrhage which often results in death. There may be no latent period where there have been large doses of irradiation and death may occur before the full radiation syndrome develops.

The hematological response to intense penetrating radiation is quite uniform but exposure to low energy radiation may result in blood changes of very short duration or may even be undetectable. There is fundamentally a leukopenia with the largest drop being in the lymphocytic series. After four to six days in the sublethal case there will be increase bone marrow activity. Not so regularly seen is a reduction in the platelet count, reduction in the red blood cell count, and morphological changes in the white cells. The atypical erythrocytes and immature white blood cells begin to appear in the peripheral blood about three to ten days after exposure.

The patients fall into four categories:

1. Those patients who die within the first two weeks. They have the acute fulminating form of radiation illness. There are histological but not gross evidence of changes in the skin, gastro-intestinal tract, lymphoid tissue, bone barrow and gonads. Nausea and vomiting is noted in the first day of exposure, usually within twelve hours. It is followed by anorexia, malaise, bloody diarrhea, thrist, and fever. The fever will rise in a step-like manner and death occurs with the patient in delirum. The earlier the fever develops, the more severe the symptoms and the poorer the prognosis.
2. That group of patients who die within three to six weeks, or who may even survive the severe symptoms. These show the maximum changes in the anatomical and clinical results of radiation. The most prominent are epilation and depression of the bone marrow. The hemorrhagic and necrotizing lesions noted are comparable to those seen in aplastic anemia and agranulcoytosis. They occur in the gums, respiratory and gastro-intestinal tracts. There is nausea, vomiting and diarrhea on the day of exposure, followed by marked malaise. Then a period of improvement until about the second week when epilation marks the beginning of the relapse. They again develop fever with malaise. The fever rises in a step-

like manner. The patient will usually have pharyngeal pain followed by bloody diarrhea. There is a profound anemia, leukopenia, thrombocytopenia and purpura. General debility persists for a prolonged period. Excessive bleeding is common. Most of these patients have received about 400 roentgens. Symptomatic care will be particularly helpful in this group. They are the greatest clinical problem and the group that can be helped the most.

3. There will be a group who have mild effects or will not have early symptoms but develop their primary symptoms at three to four weeks. This group demands very little treatment.
4. There are a few individuals whose bone marrow fails to respond and they rapidly pass into a debilitated state with anemia, leukopenia and malaise. They usually die of secondary problems.

GENETIC EFFECTS: This particular aspect has received the greatest notice in the lay press and undoubtedly to date the final answer is not known. The probability of the production of a mutation by a single ionizing dose does exist; however about 600 roentgens are estimated as required to produce significant mutation changes. This is a lethal dose. Consequently, it becomes unlikely that many mutations will develop, for the survival of the patient indicates that the probable absorption has been less than 450 roentgens. Simultaneously, it must be recalled that naturally occurring and artificially produced mutations in man are 95% fatal. Of the 5% that are viable mutations, 95% are deleterious. Of these deleterious mutations, 96% are pertinent to other than sex chromosomes; therefore one would not anticipate marked genetic abnormalities from the effects of atomic warefare. They have not been noted to date in Japan.

THERAPY OF RADIATION CASUALTIES: In Japan there was no specific treatment rendered, yet there were 1000 survivors within one-half mile of ground zero. From this one can readily assume that symptomatic treatment would help considerably. To date this seems to be borne out by animal experimentation.

In work with various animals many agents when given before exposure to ionziing radiation will exert a protective influence:

1. Shielding of the spleen or of the bone marrow is of considerable help.
2. In rats, pre-exposure cysteine or glutathione has a protective influence.
3. In the mouse, diminished oxygen tension will help, as will the injection of bone marrow or spleen homogenate.
4. In some laboratory animals, large doses of alcohol has a protective influence. This level is so great that a comparable level of alcohol in the human would prove lethal itself.

There seems to be no specific treatment, but we must rely on supportive care to date:

1. Antibiotics are helpful both on a prophylactic and therapeutic level. These are particularly the broad spectrum antibiotics as Aureomycin®, Terramycin®, Achromycin and Chloromycetin® and Tetracycline.
2. Whole blood to cover the period of anemia and as a replacement transfusion of approximately one-fifth of the circulating blood of the exposed individual.
3. Plasma for the handling of shock, particularly the newer preparations now on the market where the plasma has stood at room temperature for a period of six months. There is an obliteration of the danger of homologous serum jaundice by this simple measure.
4. Anti-hemorrhagic materials such as Toluidine Blue or Protomine, where there has been excessive bleeding may prove helpful.
5. Parenteral fluids to maintain the patient in balance who has severe diarrhea. This of course includes plasma expanders as PVP and Dextran®.
6. Rest, with limited activity for the exposed individual.

Inoculation seems to be contra-indicated for all the irradiated animals become extremely sensitive to the toxin of any bacteria. This would be an added reason for using a broad spectrum antibiotic not only for handling the infection secondary to large exposures to irradiation, but to replace tetanus antitoxin.

BACTERIOLOGICAL WARFARE: This is a possible and probable danger from the point of view of the Armed Forces. To date, many public health authorities do not feel that it is feasible. Research men affiliated with the Armed Forces believe they have developed a number of organisms that could be so brought to a population and give an exposure of such degree that immunization, as we know it, would not prove helpful.

CHEMICAL WARFARE

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R. W. Hussong, M.D.

CHEMICAL warfare would produce problems much different from those of either atomic or biologic warfare defense. The most likely chemical weapon — nerve gas — acts quickly, is detected with difficulty, causes death within a few minutes to an hour, and can affect large areas. Nerve gas, known also as G. gas may be dissipated within a short time, (non-persistent type), or may contaminate an area for hours to days (persistent type).

At the present time, our only protection against nerge gas is our ability to retaliate in its use. This may be enough protection, but we cannot be sure. The weapon will not demolish nor blast out whole areas, as will an A-bomb or an H-bomb, but it is effective because it works quietly and efficiently. The Army calls it G.B. It is colorless, odorless, and tasteless, and designed to destroy great numbers of people with suddeness that in many ways would make an H-bomb take second place.

Russia has one or more factories working full time on the production of nerve gas and there may be more. In 1928, Russia ratified the Geneva Protocol outlawing gas warfare but stated she would not be bound by it in any war with a non-ratifying state. The United States did not go along with this protocol because it was considered inadequate and ineffective, and, now that we know more of Russian tactics in such matters, it is more evident than ever that preparation is the best deterrent to any future war with Russia.

Val Peterson, Federal Civil Defense Administrator, stated that, "If an all-out nerve gas raid against the United States were launched tomorrow, the death toll would be in the billions and it could be deadlier than the atomic bomb."

We do know the affects of and how to protect ourselves against G-gas. We are at present way behind on the protective measures. It may be that pressure from organized medicine may help to get this protection to the population of this country. It is something to think about.

How could G-gas be used against us? Any intercontinental bomber could carry enough G-gas to kill all people with a 10-mile radius of its released bombs. The concentration of gas within the bombed area could kill every unprotected human being within four minutes. Not a very good thought.

Not much will be said in this article about the other chemical agents, such as mustard gas and phosgene, because the same protection would be needed against those gases as for G-gas.

As can be seen by the foregonig statements, the nerve gases are far more toxic than all of the previously known war gases, and are nearly colorless and odorless which makes them far more dangerous. They are liquids,, which release gas as they evaporate. After their use in a bombing raid or in an aerosol type of time bomb, they would probably stay close to the ground if weather conditions were rather stable. With the higher concentration near the ground, the death rate would be far greater.

The nerve gases are hydrolyzed slowly by water and at a more rapid rate by alkalies. The resulting hydroloysis products are less toxic than the original nerve gas.

These gases are absorbed into the body through the skin and mucous membranes, and through the gastrointestinal tract by swallowing saliva contaminated with the material. G-gas works by inhibiting a vital enzyme, cholinesterase, which destroys acetylcholine. Acetylcholine is a substance produced by nerve stimulation and, if not destroyed at a proper rate, it

overstimulates the parosympathetic nerve endings which control such vital functions as respiration and circulation, and the muscles go into convulsive spasms. Paralysis and death follow.

The symptoms produced by this gas depend upon the amount absorbed, which in turn is determined by the concentration of the nerve gas in the air and the degree of contamination of the skin or body portals. The action of the gas is prompt, and in contrast to the irritant war gases, it has no latent period.

The sensations experienced by a victim of G-gas were described by Dr. Seymore D. Silver, head of the Toxicology Division of the Army Chemical Center. "The first symptom is a feeling of weight on the chest and difficult breathing. Then the nose starts to run, the pupils of the eyes constrict and vision becomes difficult. Dizziness and sharp headache follow. The victim loses his sense of co-ordination and equilibrium. Suddenly he will fall to the ground, all his muscles twitching. Convulsions begin. Breathing becomes increasingly difficult and soon ccases. although the heart may continue to beat for another four or five minutes. As death comes, the body may be arched in paralysis, or limp in a flaccid paralysis."

After inhalation of larger doses of vapor, or absorption of the liquid gas by other routes, rapid and severe broncho-spasm begins, which prevents both inhalation and exhalation. The victim becomes confused and cyanotic. There may be nausea and vomiting, which is followed by unconsciousness. The blood pressure falls to shock level and there may be temporary or permanent cardiac arrest.

Mild cases of the poisoining by G-gas may show giddiness, tension, anxiety, insomnia, and excessive dreaming. The symptoms of depression, restlessness, tremor, emotional instability, and irrational behavior may occur after more severe exposure.

Nerve gases cause no significant gross or microscopic pathological changes except those associated with pulmonary edema or lack of oxygen. Laboratory findings are essentially normal, except that by special techniques, the cholinesterase level of the blood may be greatly reduced.

The preliminary treatment is as follows:

Any physical exercise on the part of the victim should be avoided and he should be kept at absolute rest after being rescued from the gas area. Any contaminated garments should be removed at once and left outdoors. The skin should be cleaned of adherent nerve gas or fluid by thorough washing with alkaline solutions such as a 5 to 10% solution of sodium carbonate, or amonia water (household ammonia). In case such alkaline solutions are not available, the skin should be cleaned with soap and water. It is, however, essential to avoid any rubbing of the dry skin since this enhances the absorption of the nerve gas. The patient must not be transferred to a hospital or any closed quarters until he is thoroughly decontaminated.

The toxic symptoms of nerve gas poisoning are to a large extent promptly counteracted by the administration of atropine. For this reason 2 milligrams (1/30 grain) of atropine sulfate should be given immediately either by intramuscular or intravenous injection. This dose should be repeated every five to 10 minutes until a total of three injections (6 milligrams) have been given, or the cardio-respiratory symptoms are relieved. Thereafter smaller doses could be given by mouth or by injection every few hours for several days until the patient is free of symptoms. Morphine should not be given.

In case the circulation is markedly impaired, atropine should be given intravenously. However, it is dangerous to give atropine in cases with prolonged and profound anoxia because this may result in ventricular fibrillation. In such cases the administration of atropine should be delayed until the lungs have been ventilated and the heart largely has recovered from the lack of oxygen.

If the respiration is impaired to such an extent that the patient suffers from a lack of oxygen, as indicated by blue lips or ashen color of the skin, artificial respiration is indicated. The usual manual methods, such as the Eve or Schafer methods, are ineffective since the respiratory muscles of the chest and diaphragm are paralyzed and do not expand after compression.

The Emerson method of manual artificial respiration may prove to give comparatively good results, especially since it permits a certain amount of drainage from the respiratory tract. With this method, the hips are lifted and lowered with the patient in the prone position. The raising of the hips 10 to 12 inches causes active expiration and lowering of the hips causes passive inspiration.

Artificial respiration should be maintained until spontaneous respiratory movements have returned, which may take 45 minutes or more.

Convulsions, if present, may be alleviated by the administration of sodium thiopental®, trimethadione (Tridione®), or ether anesthesia. Any excess of thiopental® or other barbiturates must be avoided because they act synergistically with the nerve gas in depressing the respiration. The intravenous administration of Tridione® in doses of 1 gram as a 20% solution every 15 minutes to a maximum of 6 grams depresses cortical activity effectively with depressing respiration.

The constriction of the pupils and the spasm of the ciliary muscles of the eye may not respond to the atropine medication. In mild cases they may be relieved by the instillation of homatropine or atropine into the conjunctival sac of the eye. In more severe cases atropine solution should be given until the pupils of the eye widen. This treatment may have to be repeated several times because constriction of the pupils and ciliary muscle spasm frequently recur.

It must be emphasized that large doses of atropine are required for severe cases and that the main danger lies in undertreatment. It is essential that atropine be given by a route which reaches the circulation rapidly. The intravenous administration is the route of choice. Intramuscular injection may be used if the patient is not cold or in shock. Absorption from the subcutaneous or oral route is too slow for initial treatment.

Certain types of gas masks protect the eyes, respiratory tract, and mouth from access by nerve gases in either vapor or spray form. The proper fitting of gas masks, and their maintenance, requires very considerable effort and training; hence, the subject of gas masks and designation of personnel who are to use them will be treated in future civil defense publications which are concerned with technical procedures.

If the nerve gas is of a persistent type, impermeable protective clothing, including boots and gloves, which prevents the absorption of the gas through the skin would be useful. Against nonpersistent nerve gases, protective clothing, boots, and gloves are not required. A certain amount of protection against the inhalation of nerve gases may be secured by breathing through a handkerchief or towel saturated with an alkaline solution, such as an aqueous solution of bak ing soda or soapy water.

From what is know regarding the stability of nerve gases, they may dangerously contaminate exposed foods of high water or fat content, including milk. Dry foods, such as sugar, flour, etc., are relatively little affected. Foods in airtight packages are not contaminated by nerve gas vapors, but only those in sealed glass or metal containers are safe from liquid nerve gas. Cooking of foods assists in decomposition of the gas.

In general, large bodies of water, such as reservoirs or lakes, would not be significantly contaminated by exposure to nerve gas vapors. Liquid nerve gas, however, may cause dangerous and persistent contamination of water.

It may be assumed that only persons living in large cities or strategic areas would be exposed to nerve gases. Such exposures might last for only a few minutes if nonpersistent nerve gas were encountered; the persistent nerve gas might dangerously contaminate an area for several hours to several days.

The number of persons exposed to the effects of a single nerve gas bomb would be principally determined in addition to the density of the population, by (a) the size of the bomb or carrier, (b) the prevailing winds and their velocity, which would determine the dissipation area of gas, (c) the persistency of the nerve gas used, and (d) the time of day at which the attack occurred. For these reasons it is difficult to estimate the extent or depth of the area that might be covered by the gas in sufficient concentrations to cause toxic effects. It is reasonable to assume that unprotected persons over one-half mile from the source would not be seriously affected. Adequate warning of an impending attack would greatly reduce the number of people affected. Since in a given area the intensity of the exposure would vary considerably, it appears reasonable to assume that probably not more than 50% in the area might be seriously affected.

Because atropine is the principal therapeutic agent, adequate amounts, in a readily dispensable form, such as ampins or syrettes, should be available.

In addition, medication with sodium-thiopental®, trimethadione®, or ether might become necessary. This medication would be necessary only in the treatment of convulsions resulting from severe poisoning. It is estimated that it

might be needed in approximately 10-15% of the affected cases.

For the treatment of the local eye symptoms, atropine or homatropine should be instilled into the conjunctival sac of the eye.

It must be pointed out that atropine is a violent poison, and is only used under medical supervision. It is, therefore, extremely dangerous to place this drug in the hands of a large section of the population or to allow its indiscriminate use by other means.

In view of the relatively short period of action of nonpersistent nerve gases, mass evacuation of the attacked population is not practicable. However, people should be removed from areas contaminated by persistent types of nerve gases until chemical tests prove the area to be free of contamination.

SHOCK AND HEMORRHAGE

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Tucson, Arizona



C. Clark Leydic, M.D.

THE most emergent problem in the management of mass casualties, military or civilian, is the recognition and treatment of shock and hemorrhage. While shock is most often a result of hemorrhage, other causes may produce the same clinical entity. A convenient definition of shock of all types is: shock is an abnormal physiologic state characterized by circulatory insufficiency caused by a disparity between the circulating blood volume and the vascular capacity. This disparity may result from the loss of whole blood or from the loss of serum, as in extensive burns or increased capillary permeability due to any cause. For the purpose of this discussion, such states as neurogenic or primary, vasogenic and cardiogenic shock will not be considered.

The diagnosis of hemorrhage is usually obvious, but may be troublesome if only concealed or internal bleeding is present. The characteristic signs and symptoms of shock are pallor, cold skin, perspiration, increase in pulse rate and reduction in pulse quality, anxiety, restlessness, and hypotension with reduction in pulse pressure. Reliance on the blood pressure alone as an indication of the degree of shock is dangerous, as the homeostatic mechanisms of the body maintain blood pressure until shock is well advanced. Careful observation of the pulse rate, and correlation of the other signs and symptoms will enable treatment to be instituted before a fall in blood pressure, which is usually abrupt, indicating that the irreversible phase of shock is imminent.

For practical purposes, especially in mass casualties, laboratory examinations are not of value. Hemoglobin and hematocrit determinations may serve as a guide to treatment. Determination of blood volume by the methods in current use would be difficult to justify in such a situation.

The primary necessity in the treatment of shock is the restoration of a normal blood volume. In hemorrhage, this is done ideally by the administration of whole blood. However, when the estimated loss does not exceed 25 per cent of the total blood volume, plasma or the so-called plasma expanders will usually suffice, thus reserving whole blood for those more seriously injured.

In casualties whose primary injuries are thermal burns or radiation damage, initially plasma or the plasma expanders should be employed. Later, anemia develops in these patients; then whole blood is employed as indicated.

As in hemorrhage, most patients in shock re-

quire whole blood, sometimes in vast quantities. Since the procurement, storage and distribution of whole blood is not an easy problem, efforts have been made to provide substitutes which will permit temporization until sufficient amounts of whole blood are available, or until the body itself can compensate for the loss of erythrocytes.

The use of human plasma became wide-spread during World War II. Theoretically, it is the best substitute for whole blood. Practically, it has several disadvantages for mass use, primarily because it must be collected from humans, then processed, which is expensive and time consuming. In addition, the disturbing incidence of homologous serum jaundice from many batches of pooled plasma is a real deterrent to its use.

Plasma expanders, therefore, are receiving increasing attention because of their relatively low cost of manufacture, the ease of storage and transportation, and their effectiveness in the emergency treatment of shock. It should be reiterated that they are not substitutes for erythrocytes, which must be replaced by transfusion or the individual himself. Those in present use are macromolecular colloidal solutions that exert their effect primarily by virtue of their oncotic pressure and relative viscosity. Dextran, gelatine and polyvinylpyrrolidone are the most promising expanders at this time, although none is ideal.

Dextran, a biosynthetic polysaccharide, is available commercially in a 6 per cent solution. It is nontoxic and nonantigenic in its pure form, and produces an excellent response in mild to moderate degree of shock and hemorrhage.

Gelatin, the incomplete protein obtained from collagenous structures of animals and degraded to eliminate antigenicity, is available in 5 to 10 per cent solutions. Its effectiveness parallels that of dextran. With both, some metabolism occurs in the body. It should be borne in mind that gelatin interferes with blood typing.

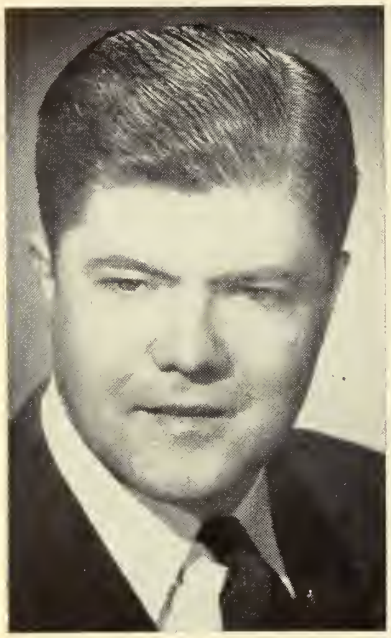
Polyvinylpyrrolidone is a synthetic polymer formed from ammonia, formaldehyde and acetylene. A 3 per cent solution produces a satisfactor response. However, metabolism does not occur and urinary excretion is incomplete, hence storage in the endothelial cells and reticuloendothelial system occurs. For this reason, the drug as presently supplied has not proven popular in this country.

The ancillary measures in the treatment of shock need not be described here. One statement may be made: the vasopressor drugs, such as the sympathomimetic amines (norepinephrine, phenylephrine, methoxamine, ephedrine, etc.) have no place in the treatment of the conditions discussed. There is no reliable evidence that they contribute to the survival of such patients, and much evidence that they may hasten the appearance of the irreversible stage of shock.

Many investigations of the effects of corticotropin and the corticosteroids in traumatic shock are under way. To date, there is no indication that they are of value in the individual with a previously intact pituitary-adrenal system. As further data are compiled, however, this statement may have to be revised.



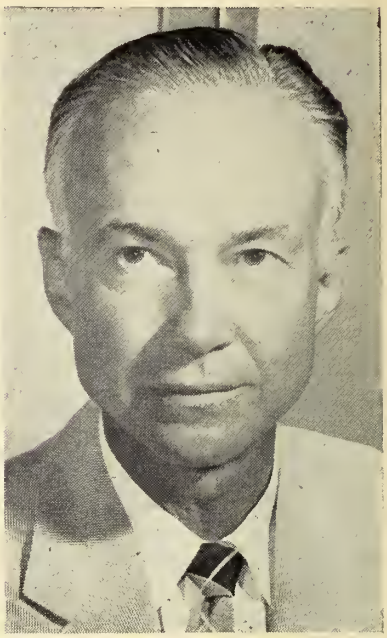
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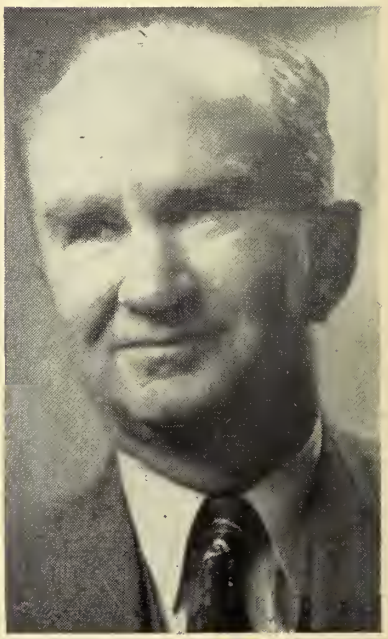
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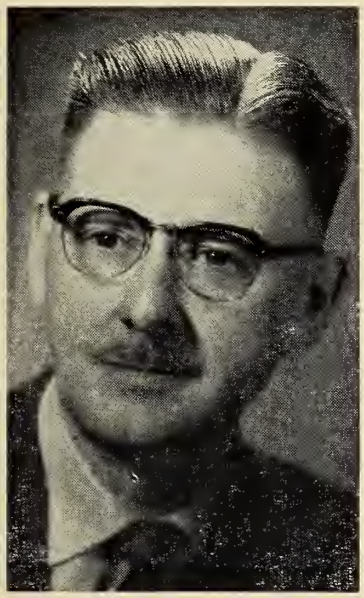
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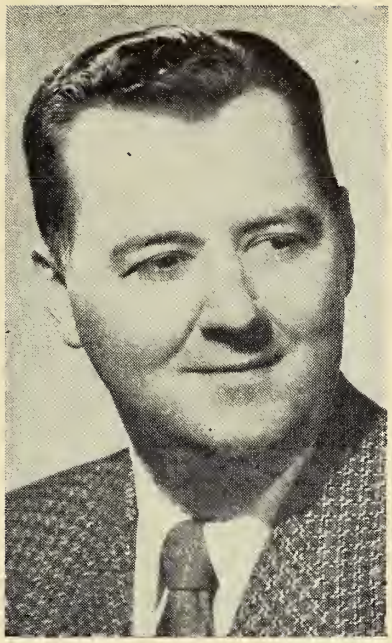
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BURNS

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CARE and Treatment of Burns as Pertains to Mass Casualties:

A. The care of the severely burned patient requires in general:

1. The prevention and treatment of shock.
2. The cleansing of the burned area and providing of protection for it; thereby preventing or minimizing infection.
3. Repair of systemic alteration in the patient's body produced by the injury.
4. Promote the early covering of the denuded area by appropriate treatment and skin grafting.

B. Extent of the body burn:

1. The extent of the body area burned is most simply evaluated by use of the "Rule-of-Nine" (Tennison and Poulaski) (a modification of Berkow's guide), employing the division of the body by 9%, as follows:

Head	9%
Upper extremities	9% (each)
Anterior trunk	18%
Posterior trunk	18%
Lower extremities (including buttocks)	9% (each)
Neck	1%

C. Degree of Burn:

1. Classification of burns as to depth:

First degree: reddening of skin.
Second degree: blistering of skin
Third degree:

(a) Superficial: destruction of the entire skin.
(b) Deep: charring of the entire skin and the underlying tissues.

The degree of depth of a burn is not immediately apparent. Reddened area, after twelve to twenty-four hours, may show blistering. Areas which show blistering, and appear to be second degree burns, may, after a period of five to fifteen days, show destruction of the entire skin area or underlying tissue.

Burns involving more than 10 to 15% of the body surface require hospitalization. The so-called "flash burn area", the face, neck and hands, often does not require hospitalization.

FIRST AID:

A. Minor Burns.

Minor burns usually require only cleasing of the part with soap and water and the application of a dry dressing. The use of ointments, antiseptics, etc., usually complicate

healing. Aspirin or Codeine is usually sufficient for the relief of pain and elevation of an injured extremity will usually prevent or reduce pain and prevent swelling

B. Severe Burns

Immediate care of the severely burned patient is to require that he lie down as fatigue tends to promote shock. Clothing should be removed from burned areas. Dirt and debris should be removed with soap and a sterile dressing, preferably a cellulose pad, should be applied and bandaged in place. (Gauze covered or backed by sterile sheet wadding is a good dressing).

A patient requiring sedation should be given 1/8 to 1/6 gr. Morphine Sulphate slowly intravenously, as absorption by other routes is unreliable in a burned patient.

Hospital Care of the Severely Burned Patient:

1. First 48 Hours (Acute Phase)

General Treatment in the Acute Phase:

Changes in the body as a result of a severe burn injury are related to the stress phenomenon, the local physical-chemical pathology and the loss of the skin as a functioning organ.

Burn shock results in almost all burns involving 20% or more of the body. Burn shock is a reduction of the circulating blood volume both as to the quality and the quantity of the blood. The blood volume is reduced because of the continuing withdrawal of the serum and plasma-like substance into the burned area, as if the body were attempting to isolate the injury or to wall it off with a protective fluid barrier. This produces dehydration of the rest of the body and increases the viscosity of the blood, eventually producing hemo-concentration. Red blood cells are directly destroyed or made more fragile as a result of thermal damage. The protein balance is thus upset as well as the Sodium-Potassium balance. Sodium is trapped in the edema fluid and high blood Potassium results from re-distribution of electrolytes and destroyed red cells.

Burn shock is rapidly progressive and reaches its maximum within four to twelve hours after injury and continues for approximately 48 hours. It is manifested by restlessness of the patient and poor color of the extremities.

Thirst is often very marked and, occasionally there is vomiting. The blood pressure is no accurate guide as to the presence or probability of burn shock. Burn shock requires immediate care, namely, the restoration of the blood volume to a working level to improve circulation. The present tendency is to administer whole blood in the prevention of shock; however, the National Research Council's recommendation of two parts plasma to each part of blood is basicly sound. The immediate administration of saline solution or glucose in water is good procedure and, except in the extremely dehydrated, the amounts should equal the total of the blood and plasma administered. Crystalloid fluids have a tendency to wash plasma out of the circulation and into the burned area and are, therefore, contraindicated; they do, however, tend to raise the blood pressure.

Orders for Supportive Therapy in Severe Burns, first 24 hours, should include:

1. Emergency sedation, if required.
2. Type and crossmatch. Draw blood for circulating blood count and hemocrit. Repeat in 12 to 24 hours.
3. Oxygen, if required, particularly in those cases where inhalation has caused damage to pharnyx and upper trachea. Prepare for tracheotomy if such is the case.
4. Intravenous plasma, normal saline solution, glucose in water, (followed by blood transfusion when available.
5. Orally, hypotonic saline-sodium bicarbonate solution, 1 tsp. salt and 1 tsp. sodium bicarbonate per quart of water orally.
6. No food by mouth, except by special order.
7. Temperature, pulse, respiration, blood pressure, every two hours, for eight hours; then, every four hours.
8. Skin test for T.A.T.
9. Administer 1500 units T.A.T. Where pa has had tetanus toxoid, give booster dose: ½ or 1 cc., depending on preparation.
10. Insert retention catheter and record hourly volume of urine. (25 cc. per hours should be considered the minimum satisfactory output). Record intake and output.
11. Tetracycline, 250 mg. every six hours, and/or 600,000 units aqueous Penicillin every twelve hours.

2. Sub-Acute Phase (after 48 hours).

Control of pain should be continued at needed.

Forced feedings. High caloric-high Nitrogen intake, using whole milk, amino acids, defatted milk. Tube feeding of the unconscious patient. Additional vitamins should be given for the general improvement of the patient.

Local Therapy:

1. The Exposure Method:

This method consists of cleasing the burned area with soap and water and flushing with saline, placing them in clean, sterile sheets and exposing the body to room temperature. Extremities are elevated and bedding, if necessary, is cradled over the patient. Extensively burned hands are placed in the position of function and pressure dressings are applied.

This method of treatment is applicable only when one or the other side of the body is burned and removal of the coagulum requires later care by the closed method after a period of fourteen to sixteen days.

Even with the coagulum intact, this treatis not applicable after the third week in full thickness burns. More sedation is required by the exposure treatment and it is mentioned only as one of the alternate methods.

2. One-Piece Absorbent Burn Dressing of Evans and Allen.

Under aseptic precautions, remove all gross dirt with liquid detergent, soap and water or Phisohex, and flush with saline. Blebs should be removed with soft gauze moistened with saline, in the gloved hand. Brushing of burned areas to remove blebs and debris is not good practice.

Burned areas are covered with ready-made one-piece absorbent burn dressing, consisting of close-mesh gauze backed with cellulose held in place with firm gauze roll bandage. Hands should be placed in position of function, knees and elbows in extension and shoulder joints in abduction, elevating the involved extremities.

3. Pressure Dressing Technique.

Cleansing as before.

Cover the burned areas with dry sterile fine-mesh gauze, or vaseline gauze.

Apply fluff gauze, sterile waste or sheet wadding over the dressing. Cover this with elastic bandage for even firm pressure only. Dressings originally applied may be left in place for seven to fourteen days. When the entire area is dressed, it is probably best done in surgery under aseptic precautions with patient under mild anaesthesia.

A more satisfactory method is to dress the more severely burned parts every second day, changing dressings on approximately one-third of the burned area; thereby, minimizing the pain to the patient and making areas of infection apparent to the attendant. (Vaseline gauze is not removed except when infection is present, with the dressing usually being changed down to the vaseline gauze.)

4. Preparation of Burned Areas for Grafting:

In preparation of third degree burns for skin grafting, the small areas may be immediately pared and grafted in one procedure.

Infected areas are best prepared by removal of the slough, application of moist saline dressing, 1-300 aqueous, Azachloramid dressing or petralatum gauze. Whenever possible, preparation for grafts should be done between fourteen and twenty-one days after the injury.

5. Skin Grafting.

The burned area has been suitably prepared. Split thickness grafts, covering as much of the area as possible in a single procedure, should be accomplished. Deep pinch grafts are to be avoided. Homografts are mentioned only as a life-saving procedure when over 50% of the body is involved. Homo-grafts are temporary except in the case of identical twins and delay final healing as these grafts must later be replaced by patient's own skin.

To Be Avoided in the Treatment of Burns:

1. Local use of antibiotics to burned surfaces, particularly, because of their tendency to produce sensitivity.
2. Use of excessive amounts of intravenous saline or glucose solutions.
3. Application of excessive pressure to burned areas, particularly, around the joints, producing constriction.
4. Use of deep pinch grafts for covering burned areas.
5. Use of brush to cleanse burned areas. (Gentle sponging, forceps and flushing are the choice.)
6. ACTH is contraindicated because it has been associated with fulminating spread of infection.

FIRST AID FOR SIMPLE FRACTURES IN CIVIL DEFENSE*

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Robert E. Hastings, M.D.

Note: This is a reprint of artiele published in the Journal of the Miehigan State Medieal Society, Volume 51, March, 1952, No. 3, Pages 326, 327 and 328, and full eredit is given to its authors Frank H. Purcell, M.D., and George V. Hendy, M.D., Detroit, Miehigan.

IT is assumed in presenting this simplified outline of first aid as related to bone and joint injuries that the first aid attendant has had at least a superfieial eourse in first aid and has some knowledge of the treatment of wounds and the applieation of splints.

Skull

I. Keep patient lying down with head and shoulders slightly raised if faee is of normal eolor or flushed. If pale, keep level or head slightly lower.

II. Move only in a horizontal position and avoid unneeessary handling.

III. Do not give stimulants or anything by mouth. Keep warm.

IV. If blood or mueus eolleets in throat, lower head and turn slightly to the side.

V. Control bleeding from the sealp by applying a sterile pad and direet pressure over the bleeding point. Apply head bandage.

I. If breathing eeases and pulse is still felt, institute artifieial respiration.

Spine

I. Neek:

1. Do not move or lift patient's head to the baek, side or forward.
2. If moved, maintain slight traetion on the head in a longitudinal axis. Plaee sand bags or pillows on either side of the head after the patient has been plaeed on a rigid flat surfaeed splint that extends well out beyond his head, e.g., a door. Place arms at side and then "mummify" the patient to the splint so that no motion of the spine is possible.

II. Lower Spine:

1. Transport lying on the baek with a pillow under the small of the baek. Use a flat surface rigid splint.
2. Never lift into or allow patient to assume a sitting position.

Pelvis

I. Transport in the lying position on a rigid splint. Tie ankles together before moving onto splint.

Lower Extremity

I. Hip and Femur:

1. Steady the limb by grasping the foot and ankle. Apply gentle traction and move the limb into a normal position so it is at the side of the body. Hold it there.
2. Apply the Thomas splint, or a long board splint from the armpit to the ankle, or tie the limbs together and use the opposite limb as a splint.

II. Knee Cap:

1. Straighten the extremity. Apply the Thomas splint or a straight board from the buttoek to the heel, padding well under the knee.

III. Leg:

1. Grasp the foot or ankle and apply gentle traction. Apply the Thomas splint or a straight board from the thigh to the foot.

IV. Ankle and Foot:

1. Plaee a large padded dressing around the ankle or foot and apply as aseending bandage.
2. Keep patient off the extremity.

*Compiled by Robert Hastings, M.D., Tucson, Arizona.

Upper Extremity

I. Clavicle:
   1. Place arm and forearm in a sling with the elbow flexed at 90 degrees. Then with another sling bind the arm to the side.

II. Arm:
   1. Place the arm in a normal position in relation with the body with the elbow straight. Then apply a Murray-Jones splint with mild traction.

III. Elbow:
   1. If the elbow is flexed, carefully apply an arm sling and then bind the arm to the body. A sling may be used around the neck and wrist to help support the elbow.
   2. If the elbow is straight, place the arm in a normal position and apply the Murray-Jones splint without traction.

IV. Forearm and Wrist:
   1. With the patient's hand out straight, splint the forearm out straight using two long basswood splints, padding being applied over the fracture site before the splints are secured in place with roller bandage or triangular bandages.

Generally speaking, improvised splints may be used, and will have to be used whenever "formal splints or splinting material" is not available. It is an accepted rule that the first regulation in the first air of fractures is to "splint them where they lie". It is the purpose of the first aid attendant to prevent any further damage to the injured extremity at the time he first sees him or until he can be safely transported to a hospital for definitive care.

The Emergency Treatment of Fractures (Casualty Care Station)

In the treatment of various types of fractures, it is difficult to plan any standardized method that might be adequate for all types of cases. There are many fractures that present very special problems, and the proper method of treatment for such cases can only be determined after careful evaluation of these factors.

However, in dealing with a large number of casualties, one must plan some uniform care. We shall first consider simple fractures:

1. All simple fractures with no displacement should be immobilized immediately in circular plaster case.

2. All fractures of long bones with displacement, should be treated by skeletal traction.

3. Oblique fractures of long bones with displacement, may be treated with open reduction and internal fixation, if trained personnel and facilities are available.

4. Fracture-dislocations, unless trained perpersonnel is present, are best treated by skeletal traction.

5. After a period of time in skeletal traction and when healing begins to take place as shown by x-ray, then these cases should be immobilized in circular plaster casts. The pins may be incorporated in case to maintain traction if necessary. Many of these cases can be immobilized as soon as bone position is satisfactory.

Condylar fractures of lower humerus, fractures of condyles of tibia and tri-malleolar fractures of lower tibia are best treated by open reduction and internal fixation with screws if facilities and trained personnel are present.

Compound Fractures. In treatment of compound fractures, proper debridement is of the greatest importance. Skeletal traction is the safest and simplest method of mass treatment of compound fractures of long bones.

The completeness of wound excision unquestionably is one of the determining factors of the end result in treatment of such cases. The surgical clean-up and preparation of the wound begins when the patient enters the operating room. After the patient is anesthetized, the logical order of procedure is as follows:

1. Traction is maintained while the clothing is cut away or removed.

2. The wound is protected by a sterile dressing.

3. An air inflated tournequet is applied if possible to control hemorrhage if severe.

4. With the wound and fragments protected by sterile dressings, the surrounding skin of the extremity is shaved and cleansed with the soap and water and a brush for ten minutes, using sterile brushes and irrigating with warm saline or water. No antiseptic or soap is allowed to enter the wound.

5. Traction is maintained while sterile drapes are applied to the extremity.

6. The skin edges are excised approximately 0.5 cm. around the entire wound. The wound is extended longitudinally so that thorough inspection of soft tissue damage can be accomplished. All viable skin is saved.

7. The wound edges are then protected with sterile towels.

8. Warm, sterile saline irrigation of the wound is continued during the debridement in which all contused, traumatized, dead, and contaminated soft tissue is excised. Black dark areas of muscle should be excised down to fresh bleeding surfaces. All hematomats are removed, and loose, small fragments of bone which are devoid of periosteal or soft tissue attachments are excised. Large cylinders of bone should never be excised or removed. Soiled and stained bone ends are carefully rongeured. No force should be used to irrigate, rather allowing the fluid to gravitate out of the wound.

9. Nerves and tendons, which retract and are later difficult to locate, should be preserved and reunited in a simple manner after the debridement.

Primary closure may be considered after a good surgical debridement if:

(a) The soft tissue injury is not severe and antibiotic or chemotherapy has been instituted early.

(b) The time interval between the injury and surgical clean-up has not been unduly prolonged.

(c) Contamination of the wound has not been severe, and has been properly alleviated.

(d) The circulation of the extremity is not severely injured.

(e) The skin can be closed without tension.

Primary closure should never be attempted if:

(a) The wound is very extensive, dirty, and difficult to debride.

(b) Extensive soft tissue and bone damage is present.

(c) Debridement has been delayed more than eight to twelve hours.

(d) Circulation is embarrassed.

(e) Skin cannot be closed without tension.

10. When the wound cannot be closed, it should be covered by loosely packed non-adherent sterile vaseline gauze and a mild pressure dressing held in place by a plaster-of-Paris case, split from end to end. This should not be disturbed for seven to ten days unless evidence of infection intervenes.

11. If the wound is clean in seven to ten days, a split skin graft may be applied to close the wound.

12. Length and position need not be sacrificed, if the principles of traction, counter traction, and immobilization of the joint above and below the fracture, are kept in mind. Skeletal traction appropriately applied, distant to the wound, supported by a plaster cast, and swung up under an orthopedic bed with ropes and pulleys for suspension are, generally speaking, preferable to immediate internal fixation.

Antibiotics should be administered in full dosage.

The possibility of gas gangrene must be remembered at all times. Adequate debridement, with removal of all dead and devitalized tissue, especially muscle, is the best prophylaxis. Rapid pulse, fever, appearance of toxicity developing in the early period of compound fracture should raise the question of gas gangrene. The wound should be inspected if this suspicion is present. Excision of affected tissues, large doses of antibiotics, use of antitoxin are values in treatment. Get expert help for treatment of gas gangrene if possible.

Tetanus antitoxin should be given unless individual has had toxoid, in which case a "booster dose" of toxoid should be given.

Fractures of Spine. Fractures of servical spine should be treated by traction, using Crutchfield tongs or head halter for fixation. The tongs are preferable.

Fractures of dorsal and lumbar spine should be treated by hyperextension, and immobilized in hyperextension plaster jacket, unless contraindicated by spinal cord injuries or some unusual type of fracture.

Treatment of Penetrating Joint Injuries

If there is a penetrating or perforating wound of the joint, wide surgical exposure of the joint should be done as early as possible through one or more incisions with careful excision of damaged soft tissue and cartilage with the removal of all available foreign bodies. The joint cavity should be thoroughly irrigated with sterile saline. The synovial membrane and capsule should be closed by any possible means with instillation of the proper antibiotics into the closed cavity. The skin and superficial tissues should be left open widely, while the extremity is enclosed in a plaster-of-Paris splint, with a window cut out over the wound. The joint should be aspirated in twenty-four to forty-eight hours and antibiotics re-instilled. Closure of the superficial wound by suture or skin graft can often be accomplished in three to five days after the above treatment.

Emergency Amputation

Amputations among casualties are resorted to only when an extremity is irretrievably damaged or a nearly complete traumatic amputation has been performed by the wounding missile. Complete destruction of the blood supply to an extremity usually means amputation is inevitable. An open circular amputation performed at the most distal point possible is probably safest. A circular incision is planned so as to avoid needless sacrifice of skin and subcutaneous fat and these tissues allowed to retract. The deep fascia is then incised at the level to which the skin has retracted. The superfiicial muscles are divided on a level with the incised deep fascia and permitted to retract. The deep muscles are then cut through to the bone at the level to which the superficial muscles retracted. Periosteum is incised with a scalpel and the bone divided with the saw at the deep muscel retraction. Careful attention should be directed to avoid stripping or injury to the periosteum. Arteries and veins are individually ligated, transfixation ligatures being placed distal to initial simple ligatures. Skin traction is immediately applied.

ANESTHESIA AFTER DISASTER

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AFTER massive disaster, physicians unfamiliar with the specialty may be required to provide anesthesia. Even those trained in anesthesia will find they will be limited by lack of materials. It becomes necessary, therefore, to consider the safest and simplest means of providing anesthesia under the most primitive conditions.

PREMEDICATION

Prior to regional anesthesia, a barbiturate is desirable. Seconal® or Nembutal®, gr. iss to gr. iii, will sedate the patient and protect him against a local anesthetic reaction.

Prior to intravenous or inhalation anesthesia, atropine is essential. Atropine sulfate, gr. 1/100 (0.65 mgm.), in a healthy adult male of military age and gr. 1/150 (0.4 mgm.) in most other adults will provide the necessary drying effect and some protection against undesirable reflexes such as laryngospasm.

It is to be hoped that there will be stock-piles of such materials from which we can draw. If feasible, syrettes containing the above-named drugs might well be made available as was morphine during World War II.

TABLE I

MINIMAL PREMEDICATING REQUIREMENTS

	REGIONAL			GENERAL		
	MILITARY MALES	OTHER ADULTS	CHILDREN OVER 3	MILITARY MALES	OTHER ADULTS	CHILDREN OVER 3
NEMBUTAL® or SECONAL®	gr. iii 200 mgm	gr. iss 100 mgm	gr. ½-¾ 25-50 mgm			
ATROPINE				gr 1/100 0.6 5mgm	gr 1/150 0.4 0mgm	gr 1/100 to gr 1/150 0.2-.3 mgm

PREMEDICATION MUST BE USED SPARINGLY IN CHILDREN UNDER 3

REGIONAL ANESTHESIA

Regional anesthesia is to be preferred where the necessary equipment is available. Reactions will manifest themselves in the form of hypotension, cyanosis, convulsions and apnea. They are treated with an intravenous vasopressor such as ephedrine sulfate, oxygen, intravenous barbiturate to control convulsions, and artificial respiration whenever apnea occurs. Mouth-to-mouth assistance of respiration will be the simplest and most readily available means. A bag and mask or other means of assisting respiration may be substituted.

INFILTRATION: Procaine, 0.5%, will provide anesthesia for ¾ hour. When ephinephrine is used, a more bloodless field will result, and anesthesia will be prolonged another hour. Suggested concentration of epinephrine is 1:100,000.

NERVE BLOCKS: An agent such as Xylocaine®, 2%, will produce excellent anesthesia. A brachial block using Xylocaine®, 2%, with epinephrine, 1:100,000, will provide effective anesthesia in excess of 2 hours. A description of the technique for this and other nerve blocks is beyond the scope of this report. But such information should be in every physician's "Disaster Folder". It is generally accepted that a limit of 1 gram should be observed. This means that one should not use over 100 cc. of 1% solution or 50 cc. of 2% solution except in robust, healthy individuals. Epinephrine is to be avoided in cardiacs and in patients with peripheral vascular disease.

SPINAL BLOCKS: This form of anesthesia is ideal for surgery of the lower abdomen and lower extremities. Procaine will anesthetize for

45-60 minutes, and pontocaine® for 60-90. Addition of epinephrine ½-1 mgm. (½ to 1 cc. of 1:1000) will increase anesthesia from 1 to several hours. It is suggested that a total dosage of 1 mgm. of pontocaine® per 10 lbs. of body weight not be exceeded. If oxygen is available, it should be used.

TABLE II
SUGGESTED DOSAGES FOR SPINAL ANESTHESIA IN 150-LB. PATIENT

Operation	Pontocaine®	10% Glucose	With Spinal Fluid	Interspace	Time
Hysterectomy	12mgm.	2cc	3½cc	L2-L3	90 min.
Herniorrhaphy, Inguinal	12mgm.	2cc	3½cc	L2-L3	90
Trans-Urethral Resection	8-10mgm.	2cc	3½cc	L3	90-120
Appendectomy	12mgm.	2cc	5 cc	L2	90
For Lower Extremities	10-14mgm.	2cc	3 cc	L2	90-120

Resulting solutions are hyperbaric — heavier than spinal fluid. Addition of Epinephrine, 0.5 to 1.0 mgm. (½ to 1cc of 1:1000) will increase anesthesia from 1 to several hours.

GENERAL ANESTHESIA

The shocked stomach does not digest food. The stomachs of patients presenting themselves for emergency surgery are presumed full until proven otherwise. Vomiting sometimes occurs when ever pentothal is used. When this happens, a bite-block should be placed between the patient's teeth and the head should be turned to one side and lowered. It may be necessary to use the fingers to dig out undigested food particles.

A clear airway must be maintained at all times. This is often accomplished by an upward pressure on the point of the chin or angle of the jaw. Where a Guedel-type oral airway is not available, a stitch through the tip of the tongue is most helpful. Loose bridge-work and plate-work should be removed. A means of removing excess mucus from the throat should be devised.

Pulse and respiration and where possible B.P. should be carefully watched for significant changes.

INTRAVENOUS: Pentothal® is not an analgesic agent. Unless an anesthetic machine is available, therefore, the use of pentothal® should be restricted to induction of anesthesia, treatment of local anesthetic reactions, and operative procedures not requiring muscular relaxation. It should be used in a 2½% solution; i.e., 1 Gm/40cc. Patients should be encouraged to cough and clear their throats of any foreign material prior to induction. The induction should be slow, in order that apnea may be avoided. If a gram has been used in a brief period of time, if the patient shows signs of requiring much more, and if the end of the surgery is not in sight, the anesthesia should be switched to ether.

INHALATION: The physician may have to devise his own mask. The equivalent of 8-12 thicknesses of gauze should be used. The face should be protected from ether "burn" by covering with a thin layer of vaseline. The eyes may be protected by a dry towel. A dry one is to be preferred, since ether evaporates more rapidly from a dry than a wet surface. Also, any wet area will then indicate the presence of ether, and can be shifted away from the eyes. The same towel can be wrapped around the mask in such a manner as to prevent the loss of ether.

Most physicians who have had experience with open drop ether know the wisdom of the saying that, "In giving ether drop by drop, never hurry, never stop." This applies to the period of induction. Later a given level can be maintained with intermittent administration of the agent.

Induction can be speeded by using vinethene, but it must be used with extreme caution since dangerously deep levels can be reached in a short period of time. Convulsive movements are frequent with vinethene. They are usually cured by removing the mask. When anesthesia is resumed it should be with ether.

When available, oxygen at the rate of 200 — 300 cc./min. should be administered under the mask. Although this will slow the induction, it will add to the safety of the procedure. Induction with ether will take from 10 to 20 minutes. Ether will be the anesthesia of choice for upper abdominal work. A satisfactory level has been reached when the eyes are fixed and respirations have become smooth and even. If there is ever doubt as to whether the patient is too deep, the ether should be discontinued. Adequate means for resuscitation will not be available. We must be prepared to do without anesthesia machines, defibrillators, and other similar aids to the surgical team. If the patient becomes apneic, mouth-to-mouth breathing for a few moments may save his life.

For those who can apply it, the endotracheal technique will prove invaluable. Even without

an anesthesia machine, this technique can be used to great advantage. Suitable catheters can be made from moderately stiff rubber tubing.

SUPPORTIVE THERAPY

After the disaster, we shall undoubtedly be forced to rely greatly on plasma volume expanders. Showing the most promise among these are gelatin, polyvinylpyrrolidone (PVP) and dextran. A description of these expanders should be among the physician's file on "Disaster Anesthesia".

SUMMARY

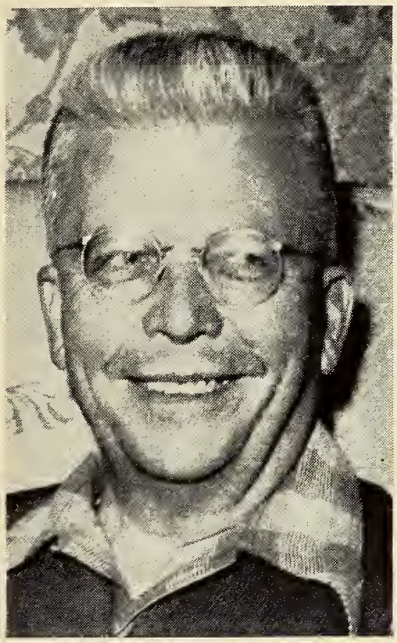
After the disaster, we may be without anesthetic machines, without oxygen, without equipment to provide suction. Means of supplying emergency anesthesia under these conditions is discussed.

It is recommended that the physician's folder on "Disaster Anesthesia," be augmented by a description of various nerve blocks as well as more detailed information concerning plasma volume expanders.

Adequate preparation is a small price to pay for Freedom.

THE CARE OF SOFT TISSUE WOUNDS

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Joseph M. Greer, M.D.

THE CARE of soft tissue injuries is similar in Military Combat and Civil Disaster with the exception of the actual gun shot and shrapnel wound, and the damage from radiation.

This discussion will be confined to general principles and will be given rather in outline form because of the space allotted.

The fate of the injured depends to a large extent upon the initial care which they and their wound receive. Many times it is the surgeon who first sees the patient whose skill and judgment determines the entire future course. He must examine and evaluate th condition of the patient quickly and institute the proper care, and must start immediately the care for life-threatening emergencies such as hemorrhage, suffocation, open chest wounds etc.

The physician receives the patient after first-aid, but all physicians should be well grounded in first aid, for many times the proper treatment of the patient for the first few hours or even the first few days may be just good first aid.

GENERAL PRINCIPLES

The open wound which has received proper first aid care will probably be received in the emergency room covered with a voluminous first aid compression dressing. Evaluate the condition of the patient quickly and starte life-saving treatment if required.

I. Avoid further contamination of the wounds. Wear gown, mask and dress and inspect the wounds under aseptic precautions.

II. Examine the patient and evaluate the whole situation as soon as possible. Be alert for obscure wounds and injuries. Minor wounds at first appearance may really be major injuries or become major as time goes on.

III. Determine what care takes priority. Many wounds will be multiple and some may be threatening life and will take first priority.

IV. Handle patients carefully to prevent further injury to the soft tissues, as some, and probably most, serious injuries to soft tissues, will be complicated by fractures of the spine or extremities which will cause further damage to adjacent soft tissues if not carefully and properly handled. For example patients will require proper support to facilitate breathing in chest wounds, lying on the face to prevent suffocation from bleeding in face and neck injuries. As-

pirate blood and mucous, and keep a free airway. Be alert to the necessity for tracheotomy.

V. The care of the open wound itself. Suitable anesthesia is required. Cleanse the area around the wound and then the wound itself. The interne or nurse assistant should get into this with mask, gown and gloves and use both hands, not one hand at the end of a forceps. This should be a thorough cleansing. Use plain neutral soap and plenty of water for several minutes, then flush with saline or more water for, if handling many patinets, most everything else will soon be consumed. Some surgeons like to use a mild antiseptic, which is fine if it is available.

The actual wound treatment is careful inspection, excision of devitalized tissue and repair. The needless sacrifice of viable tissue by the old debridement of excision of tissue a certain distance is not now required. Debridement should be minimum in face and hand injuries. The abundant blood supply in these areas will save much tissue that looks questionable at first. Foreign bodies should be removed as encountered but damage to tissues should not be done to remove foreign bodies, and especially if they are deep, small and metallic. The surgeon will have to make a decision as to whether to close the wound or leave it open. This will depend largely upon the age of the wound and its character. Don't forget delayed primary suture; prepare to close the wound by suture but leave it open for three or four days and then close it. War wounds were almost universally left open. Only fresh clean wounds can be closed with safety. Large contaminated wounds are not closed even though we have antibiotics. Again remember delayed primary suture. Deep repair depends upon location and tissues injured. Sutures should be placed without tension and edges approximated carefully. Modern equipment now frequently makes it possible to quickly place a split thickness skin graft over wounds in which there is great loss of skin. This makes for comfort of the patient and quick healing of the wounds, and if further surgery will be required this can be done at an earlier date. Apply compression dressings, large, thick, resilient and snug. These dressings should not be too tight and not constricting. Surgeons must verify.

WATCH THE PATIENT

Anything more than first aid treatment of wounds must not be undertaken until the patient is in condition for such treatment. Care of asphyxia, shock and hemorrhage demand first attention. The wounds should be evaluated and planning done for their care while this general treatment is being carried out.

Keep an open airway. Tracheotomy may be required. If the patient looks like he might go into shock or is in shock, institute shock treatment immediately. Don't forget oxygen and the nasal catheter is the best method to use. Morphine relieves pain and helps in shock but this should not be given or should be given with judgment in head injuries. Infusions and blood are needed. Hemorrhage must be stopped. Initially, pressure is usually sufficient to stop hemorrhage. Watch bleeding in face wounds, as pressure may be dangerous to tissues in this are and meticulous clamping of the bleeding vessels with small forceps and ligation is usually required.

After shock and hemorrhage have been treated or even during such treatment a quick and thorough physical examination is made. Surgeons should do this quickly and not damage the patient in making this examination. In the treatment of soft tissues the surgeon should know whether or not there is a fracture although it has not been definitely evaluated by x-ray, as if the fragments move they may further injure soft tissues. Watch for fractures of the spine. Is there an abdominal injury? Is there a chest injury? Decide upon operative procedure as soon as possible but do not start until the patient is ready and in condition for the procedure planned. Do not allow the patient to be moved about unnecessarily and do not allow unnecessary x-ray examinations and especially in head injuries.

Antibiotics are given soon. Preferably such antibiotics should reach both gram-positive and gram-negative organisms, such as Combiotic® initially and this to follow and added to by aureomycin®, terramycin®, etc. Tetanus boosters are given to individuals who have been in the military service or who have been previously immunized: Tetanus antitoxin to those who have not. In infected wounds sensitivity tests are recommended where feasible. Particularly if the wound starts draining this should be done. I see no point in doing this in fresh wounds. The new long acting repository penicillin compounds may prove of value in the future and will be easy to use.

THE WOUNDED ABDOMEN

First in the care of the wounded abdomen is diagnosis and evaluation. The care and handling of wounds of the abdomen has as much to do with the handling of the patient as it does with the handling of the wound with which the patient has been inflicted. The evaluation of patients in number with wounds of the abdomen is not as easy as handling a single patient with an acute abdomen, as he comes to our office or as we see him in the hospital emergency room. In the latter case if we don't know what it is that is making the abdomen acute we can look in and see.

In the injured patient with a wounded abdomen or injured abdomen there may and usually are other injuries and we would not want to add injury to his abdomen unless absolutely required. On the other hand, if it is require it must be done soon.

In the care of these injured patients with wounds and/or injuries to the abdomen I would say that we might classify the procedure as follows:

First: Recognition: Is there a wound or injury to the abdomen?

Second: Appraisal: Is this wound penetrating? Is it most likely to be penetrating? Is there likely to be injury to intraabdominal organs or hollow viscera? If the answer is "yes" make plans for laparotomy soon.

In an abdominal wound that might or might not be penetrating the question is: Is it penetrating and is there injury to the abdominal hollow viscera or solid organs? This question must be answered.

In a questionable wound of the abdomen, do not try to probe the wound to feel if it is penetrating but excise or debride the wound and see if it goes into the abdominal cavity. Locate the site of the injury as nearly as possible by the location and character of the wound and the physical findings of the abdomen. This will help in the surgery that may have to follow. In injured patients, many of our ordinary signs and symptoms of the acute abdomen are not present or cannot be depended upon. Vomiting for example, is of little value in the injured patient with multiple injuries and so soon after the mental trauma of injury. Rigidity of the abdomen is not reliable.

Remember that in the injured patient who is excited by the confusion of injury after the patient has been given a narcotic a better and more reliable examination of the abdomen can be made, with much better localization. Again watch out for head injuries and chest injuries when giving narcotics. However an abdominal injury, if neglected or overlooked, might take the patient away as surely as the head injury, if not more so. Injuries to the spine may cause abdominal pain and distention. But don't forget there may also be associated intraabdominal injury. I can recall having seen three of these in the not far distant past.

As we know, gas under the diaphragm demonstrated by x-ray is pathognomonic of injury to hollow viscera. Make this examination if it is feasible, and especially in questionable cases. However remember that the patient should be upright for at least 20 minutes before this radiograph is taken.

Normal peristalsis, as heard with the stethoscope is indicative of NO intraabdominal injury. Try to correlate the findings of the abdomen with other injuries and the condition of the patient. Keep in mind that indefinite abdominal exploration is not a harmless procedure and especially in an injured patient. Let us try to make as accurate a diagnosis and appraisal of the patient as can possibly be made and as quickly as possible. It may save lives and it will certainly save time.

All doctors know that the following symptoms may be mentioned as indicative of a ruptured viscus in an injured patient: Localizing abdominal pain, later becoming generalized, muscular rigidity, tenderness (direct and rebound) nausea and vomiting, absence of peristalsis, absence of abdominal breathing, and x-ray demonstration of gas under the diaphragm. Exploration of the abdomen by paracentesis with a large needle has been done by some surgeons. I have had little experience with this procedure.

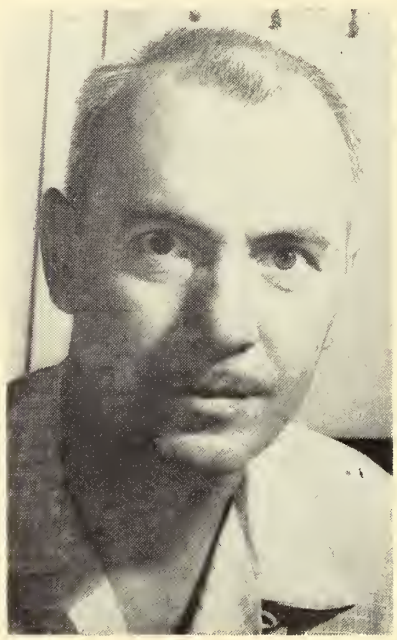
I shall not go into the technical procedures in the operative treatment of abdominal wounds, as it varies with the condition found and to qualified surgeons it would be didactic. I will say that in most any injury of the spleen, that the spleen should be removed. Further I would like to report that many patients with wounds of the intestine were saved during the Second World War by quickly opening the abdomen and bringing the wounded and open intestine out-

side the abdomen and suturing and leaving it there and the technical repair of the intestine done at a later date.

Many more things could be said about the care and treatment of soft tissue wounds in injured people. It is hoped that these few remarks and those of other authors here will be of interest to those of you who will take the time to read them. It is further hoped that they will stimulate further thought and a study in the minds of physicians and surgeons who will be called upon to treat injured people.

THE CARE OF THE INJURED URINARY TRACT

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Robert Cummings, M.D.

INTRODUCTION

INJURIES of the genitourinary organs in peace time are nearly always produced by forceful, non-penetrating trauma. The kidney may be simply contused or its parenchyma and vessels may be torn or lacerated. A full bladder is occasionally ruptured by a direct blow or, even when empty, may be punctured by a spicule of fractured pelvic bone. Nor is it rare for the urethra to be disrupted at the prostatovesical or prostatomembranous junction. Usually a single injury is produced and the physician's attention is immediately directed to that injury.

In wartime, though injuries may be single, they most commonly are produced by missles and are multiple. Such wounds are nearly always complicated by perforation of intra-abdominal organs. Under such conditions the physician's attention is less commonly directed to the urinary organs.

Those experienced in the management of wartime, genitourinary wounds emphasize the importance of immediate recognition of the urinary injury so that its surgical repair may be carried out at the time of the original laporotomy. Experience has taught that early repair of urinary injuries, before infection or chronic inflammation occurs, conserves normal function of essential urinary organs.

In the following outline of the care of the genitourinary wounds, it should be assumed that coincident injuries to other organs exist but their specific management cannot be detailed.

INJURIES INVOLVING GENITOURINARY ORGANS PRIMARILY.

I. *Kidney*

A. Incidence.

Wounds of the kidney occur in from 14% to 30% of wartime casualties(3,5). Five per cent of abdominal wounds and 10% of thoracoabdominal wounds have associated renal injuries. Sixty per cent of kidney injuries have associated intraperitoneal wounds(1).

B. Recognition.

1. An evaluation of the type of injury must be made with reference to the regional anatomy. Wounds of entrance and exit must be studied and drainage of feces or urine from such wounds must be recognized.

2. Hematuria is always noted in renal injury but the degree of hematuria does not parallel the magnitude of the injury.

3. Evidence of blood loss with shock will be found in varying degree. Perirenal hemorrhage is recognized by an increasingly palpable mass in the flank.

4. Pain is located in the flank and is accompanied by muscle spasm even in the absence of intraperitoneal injury.

5. Abdominal distention and ileus follow renal injury with or without intraperitoneal perforation.

6. X-ray recognition.

a. Intravenous pyelograms should be secured in all cases of suspected renal in-

jury as soon as shock has been controlled. Only by means of this examination will the presence of a contralateral normal kidney be proven.

b. Retrograde pyelograms are advised by some urologists, but most reserve this study for those cases in which intravenous pyelography is unsatisfactory.

c. Intravenous pyelograms may fail to visualize the kidney because of profound shock, extensive renal parenchymal damage or major vascular injury.

d. Perirenal hematoma produces a concavity in the axis of the spine on the injured side and a diffuse obscuration of the psoas muscle shadow.

e. Urinary extravasation may be recognized by abnormal distribution of the contrast media beneath the renal capsule or into the perirenal fat within Gerota's fascia.

f. Foreign body or missile may be recognized in association with the evidence of renal injury.

C. Initial Care.

1. The basic principles of first aid apply to all seriously hurt persons. Strict rest and immobilization of all associated injuries must be secured to facilitate early transportation. Opiates in adequate doses must be administered.

2. Hemostasis should be attempted by packing or the application of pressure dressing.

3. Shock is treated by the administration of parenteral fluid or whole blood when available. The administration of oxygen when available is beneficial.

4. The injured patient should be conspicuously tagged indicating the nature of the wounds and the treatment given.

D. Definitive Treatment.

1. Injuries due to blast.

a. Renal contusion is usually the extent of these injuries and with conservative rest one may expect uncomplicated recovery.

2. Non-penetrating renal injuries.

a. As a rule these renal injuries are not a surgical emergency. In addition to conservative supportive measures, the maintenance of fluid and electrolyte balance, antibiotic substance should be given to prevent renal and perirenal infection.

b. Indications for operative intervention.

1. Continued and uncontrolled bleeding over a significant period of time, which is usually two or three days rather than a few hours, constitutes an indication for exploration of the kidney. Bleeding of such magnitude that immediate operation is necessary is associated with a most grave prognosis.

2. Continued bleeding is recognized in these cases by an increasingly palpable mass in the flank. Serial determination of the blood hemoglobin and hematocrit values should be followed elosely.

3. Massive urinary extravasation is indicated on pyelographic studies and generally the patient's condition fails to stabilize. All evidences of renal injury worsen by the hour and the patient may appear in imminent danger of dying. Clinical judgment will indicate, even to the inexperienced, when operation is necessary under these conditions.

4. There is present the danger of infection and abscess formation when urine extravasates into a perirenal hematoma and when uncontrolled, drainage and hemostatis must be carried out.

5. When the patient is not doing well, showing progressive anemia, persistent and progressing ileus and general weakening, surgery about 72 hours after the injury may be necessary.

3. Penetrating Renal Injuries.

a. Wounds of this nature are usually associated with thoracic or abdominal injury and immediate operation is necessary as soon as the patient's condition will permit.

b. The kidney is generally approached transperitoneally during the course of the laporotomy. However, this incision may be extended laterally to approach the kidney from the classic lateral extraperitoneal area.

c. Increasing experience with the thoracoabdominal incision make it possible to explore lung, kidney and peritoneal cavity through one incision.

4. Types of Operation in Renal Trauma.

a. Debridement, exploration and removal of foreign body is necessary in penetrating wounds.

b. Hemostasis and repair in penetrating

kidney lesions is accomplished with mattress or figure of 8 sutures if parenchymal damage is not too extensive. The use of muscle tissue or hemostatic cellulose products incorporated in the closure may be helpful.

c. Nephrectomy is required when serious bleeding is encountered or when there is massive parenchymal infarction. Kidney containing multiple abscesses should likewise be removed in most cases. Secondary hemorrhage seen 10 to 14 days after repair may also necessitate nephrectomy.

II. *Ureter*

A. Incidence.

Wounds of the ureter are reported in only 3.4(5) to 6.6% of the genitourinary war wounds. The small diameter of this organ and its protected location make ureteral injury uncommon except in very extensive wounds of the flank or hip area. The magnitude of such associated wounds may preclude even first aid. And in other cases diagnostic studies to detect this injury may not be possible before emergency treatment is required.

B. Recognition.

1. An awareness of the possibility of this injury will result in a higher percentage of these lesions being located and repaired at the time of the initial surgery.

2. Hematuria in the absence of obvious renal or bladder injury suggests the possible presence of ureteral trauma.

3. Urinary extravasation from a wound may occur in several days when ureteral injury has not been recognized.

4. Chills and fever with a tender mass in the renal area suggest hydronephrosis resulting from ureteral disruption.

5. X-ray.

a. Intravenous pyelography may disclose this injury initially, or as a result of failure to disclose a normal urinary tract, make necessary retrograde studies.

C. Treatment.

1. Linear tears.

a. When the ureter is injured by a loss of a segment of its wall but with its longitudinal integrity maintained, regeneration about a splinting catheter may occur. Such a catheter of 10F or 12F size, inserted through the ureter is brought out of the incision at the proximal end through a pyelotomy. A nephrostomy should likewise be done to divert the urine from the healing ureter. A T-tube may also be used to splint the ureteral defect but positive drainage is less certain than when a nephrotomy is performed. The torn edges of the ureter are curved over the splinting catheter as much as possible with interrupted fine catgut sutures as described by David M. Davis.

b. The use of a ureteral catheter as a splint, threaded through the ureter upward into the pelvis of the kidney and downward into the bladder is condemned, for such a splint cannot be properly maintained sufficiently long to allow healing.

c. The wound must be drained at the site of injury.

d. The splinting of the ureter is maintained for six weeks.

e. Post recovery dilatation of the ureter will occasionally be required.

2. Transverse complete tear.

a. When the two severed ends of the ureter are located in a wound, they may be united over a splinting catheter by approximating the muscularis layers with interrupted fine catgut.

b. Splinting of the anastomosis and diversion of the urine as described above is essential.

3. Loss of ureteral segment.

a. When a segment of the ureter is removed by the injury, repair may not be possible and nephrectomy is required.

b. When salvage of the kidney is required, nephrostomy will preserve the kidney until later corrective surgery may be employed. If the proximal ureteral stump is long, a cutaneous ureterostomy may be provided for good drainage.

c. If the ureteral defect is in the distal portion, reimplantation of the ureter into the blader directly or into a tube fabricated from a long flap of the bladder will re-establish continuity.

III. *Bladder.*

A. Incidence.

Fifteen per cent of genitourinary war wounds were of the bladder(5). In penetrating wounds of the buttock 50% to 75% involved the bladder.(4)

B. Types of Bladder Injury.

1. Non-penetrating forces, such as may occur in blast injuries, may rupture the distended bladder.
2. Penetrating missiles perforate the pelvic viscera as well as the bladder in most cases.
3. Perforation of the bladder may be produced by bony fragments of fractured pelvic bones.

C. Recognition.
1. There is immediate suprapubic pain following rupture of the bladder.
2. Shock follows rapidly after the injury.
3. Though the desire to urinate is intense, only blood in small amounts is voided.
4. The abdomen rapidly becomes rigid following bladder rupture.
5. Catheterization reveals an empty bladder.
6. Urine may drain through the external wound.
7. X-ray.
a. The bladder is distended with contrast media to secure a cystogram. Films are taken in the posteroanterior and oblique positions and again after the bladder is emptied.
b. When the integrity of the bladder wall is disturbed, the contrast media spreads into the peritoneal cavity or into the perivesical spaces.

D. Treatment.
1. As soon as shock has been controlled immediate surgery is demanded when extravasation is demonstrated. However, in contusion of the bladder, without rupture, only conservative non-surgical treatment is required.
2. When extravasation of urine occurs the abdomen is opened and the peritoneal cavity explored. Intraperitoneal rupture of the bladder is closed from the peritoneal side and after the urine and blood are aspirated from the cavity, the peritoneum is closed without drainage. The bladder is then opened, foreign body removed when present, extraperitoneal defects closed, the perivesical area drained and the bladder closed about a 28F to 30F catheter, brought out of the wound about three fingerbreadths above the symphysis.
3. Cystostomy drainage is maintained for at least seven days.

IV. *Urethra, exclusive of the penile segment.*

A. Location of proximal urethral injuries.
1. At the vesical neck with separation of the prostate and bladder.
2. At the apex of the prostate with separation of the prostate from the membranous urethra.
3. In the proximal urethra from the membranous urethra to the penoscrotal junction.

B. Recognition.
1. Injury above the triangular ligament (urogenital diaphragm).
a. There is immediate suprapubic pain, especially when urination is attempted, and the abdomen becomes rigid.
b. Shock may occur and with continued bleeding a suprapubic mass occurs.
c. Blood and urine do not appear at the urethral meatus, for the injury is above the external urethral sphincter.
d. A catheter or sound usually will not pass into the bladder.
e. X-rays are not essential but if a urethrogram is made, the point of rupture is visualized.
f. Cystoscopy only adds to the shock and pain and is not essential.
2. Injury below the triangular ligament.
a. Pain is located in the perineum.
b. Suprapubic pain and rigidity are absent.
c. There is steady bleeding from the urethral meatus but urine cannot be voided.
d. Hemorrhage outside the urethra is contained within Colles' fascia.
e. A catheter obstructs at the site of the rupture.

C. Treatment.
1. Rupture above the triangular ligament.
a. Suprapubic cystostomy is performed.
b. Hemostasis is secured in the retropubic space.
c. An indwelling catheter, inserted through the urethra, may be guided through the defect by inserting the index finger through the prostatic urethra. Or it may be necessary to use two sounds, one through the urethra from below and one through the prostate above, in an effort to guide the lower sound into the bladder so that a catheter may be passed over its tip and passed through the urethra in a retrograde manner as the sound is withdrawn.
d. It is seldom possible to re-unite the

torn fragments with sutures. This reapproximation is best accomplished by placing traction on a Foley bag catheter distended within the bladder. Reapproximation may also be accomplished by placing heavy traction sutures in the vesical neck on either side of the urethra and then drawing them out through the perineum behind the scrotum on long straight needles as described by Leadbetter. Traction on these sutures, which may be tied over pads in the perineum, will pull the separated fragments together.

2. Rupture below the triangular ligament.

a. A perineal incision over the urethral bulb, will disclose the torn ends of the urethra which may then be reunited over a splinting Foley bag catheter.

b. The perineal wound is drained.

c. The splinting catheter is maintained in the urethra for three weeks.

d. Subsequent urethral dilatations must be regularly and unrelentingly carried out after the catheter is removed.

V. *Penile Urethra and Penis.*

A. These mutilating wounds are produced by missiles and recognition is obvious.

B. Objects of treatment.

1. Hemostasis.

2. Debridement must be skillfully done to preserve all viable tissue.

3. A urethral splinting catheter must be inserted.

4. Late reconstructive surgery will be required.

VI. *Scrotum.*

The scotum possesses great elasticity and regenerative characteristics and, after hemostasis and debridement, may be closed over the testes. If the scrotum is avulsed, the testes may be placed in subcutaneous pockets on the medial sides of the thighs.

VII. *Testes.*

The necessity to retain the testes, as long as there is any viable tissue, is obvious. The tunica albuginea is closed over any defects through which the testes herniate.

INJURIES INVOLVING THE GENITOURINARY OGRANS, SECONDARILY

I. *Neurogenic bladder.*

A. Basic concepts of treatment.

1. Following acute trauma to the spinal cord there is a period of time, lasting from a few weeks to many months, when all reflex cord action is gone. This period is known as the period of spinal shock.

2. Following the recovery from spinal shock all reflex activity below the site of cord injury, becomes hyperactive.

3. Reflex emptying of the bladder in lesions above sacral segments one, two and three, cannot occur during the period of spinal shock.

4. During this period drainage of the urine is necessary to prevent chronic over distention of the bladder.

B. Fundaments of treatment.(5)

1. Insert a Foley bag catheter in the urethra of patients unable to void after spinal cord injury.

2. Maintain catheter drainage until either spinal shock disappears with return of spinal reflex activity or until four to five weeks have passed after which time suprapubic cystostomy, placed well above the symphysis pubic, is performed.

3. During the period of catheter drainage the catheter should be changed every seven to ten days.

4. Tidal drainage may be instituted but prabably is not as important in preserving the capacity of the bladder as is the prevention of infection of the bladder.

5. Following recovery from spinal shock, the patient should be transferred to a center for the care of paraplegic patients.

C. Precautions in the care of the acute neurogenic bladder.(5)

1. Do not allow over distention to occur.

2. Do not expect manual pressure to empty the bladder.

3. Do not catheterize the patient intermittently.

4. Do not continue urethral catheter drainage in the presence of urethritis, periurethritis or acute epididymitis.

II. *Acute Renal Insufficiency.*

A. Causes.

1. Prolonged shock.

2. Incompatible blood transfusions.

3. Crushing injuries.

4. Hemolysis of blood from water infusion.

5. Sulfonamide sensitivity.

6. Complications in obstetrics.

7. Renal poisons, i.e., mercury and carbon tetrachloride.

B. Basic pathology.
1. Reversible damage to renal tubular epithelium.

C. Symptoms and early signs.
1. Surgical shock.
2. Nausea and vomiting.
3. Chill.
4. Oliquria, less than 400 c.c. of urine in 24 hours.
a. With the onset of symptoms there will be found, if sought, a progressive decrease in the volume of daily urine output. In the course of two or three days the urinary output will decrease to zero.
b. Anuria, occurring in an essentially normotensive patient who has no demonstrable upper urinary obstructive lesions, is due to renal failure.
c. The output of urine may most accurately be determined if a functioning urethral catheter is left indwelling.

D. Prognosis of acute renal failure.
1. Recovery from acute renal failure has been reported in 80% of a small series of cases.(8) Others feel that 50-75% recovery is the average at this time.(11)
2. Causes of failure in treatment.
a. Over hydration.
1. The kidney in acute renal failure cannot be driven to function by forcing excessive fluid intake by any route.
2. Excessive hydration causes pulmonary edema, cerebral edema (with mental confusion, convulsion, coma and death) and peripheral edema.
b. Electrolyte imbalance.
1. Elevated plasma potassium is toxic to the myocardium and is the most common cause of death in anuria.
2. The toxic effect of potassium on the myocardium is accentuated by low plasma calcium and sodium and by acidosis.
3. Sodium chloride and potassium loss may be excessive in the period of diuresis following regeneration of the tubules causing rapid deteriorization of an already seriously ill patient.
3. Diuresis and ultimate recovery should begin within nine to fourteen days after the onset of anuria.(8-10)

E. The physiology of electrolyte changes in anuria.
1. Normal cell catabolism produces a relatively slow increase in plasma potassium in the anuric patient over a period of many days. However, when potassium in excess is released from damaged cells, as may occur in crushing injuries, burns, infections or hemolysis of blood, there occurs a marked and rapid increase in plasma potassium with severe myocardial dysfunction.
2. Electrocardiographic changes in hyperkalemia appears early but clinical signs are not reliable and occur late as death becomes imminent.
a. Early electrocardiographic changes of rising plasma potassium are elevation and peaking of T waves in the precordial leads, and as further elevation occurs, these T wave changes occur in the limb leads. At this time as the potassium level rises there is widening of the angle between the S wave and the ST segment until it is obliterated in the limb leads. The T wave then becomes rounded and the P wave may disappear. Widening of the QRS segment in these cases indicates low plasma calcium.
3. In the anuric patient, inorganic phosphorus is retained and as the level of plasma phosphorus rises there is a fall in plasma calcium. Raising the calcium level will not however, decrease the phosphorus.
4. Calcium is a specific antagonist of potassium in its effect on the myocardium.
5. Intravenous glucose causes some reduction of phosphorus but not enough to allow the calcium to rise sufficiently to antagonize the elevated potassium.
6. Intravenous sodium decreases the potassium in the plasma by forcing potassium back into the cell.
7. Intravenous glucose, with insulin added, converted to glycogen, removes potassium and some phosphorus in this carbohydrate complex.
8. Glucose must be administered constantly, for the conversion of glycogen to glucose during a period of hypoglycemia releases potassium to the plasma once again.

F. Treatment of acute renal insufficiency.
1. Bed rest reduces cell catabolism to a minimum. Secure early normal electrocardiograph.
2. Antibiotics prevent or reduce infection

which if uncontrolled would excessively rapidly increase plasma potassium.

3. An indwelling catheter should be placed early so that the output may be accurately followed.

4. Vomitus and Wangensteen drainage must be accurately measured each 24 hours for replacement.

5. Oral feeding and drinking, even if the patient desires, are undesirable.

6. An intravenous polythene catheter should be inserted for continuous slow intravenous fluid administration.

7. The volume of daily intravenous fluid should be 500-800 c.c. (insensible daily loss) plus the volume of urine and gastric secretion recovered.

8. A solution advised by Meroney and Herndon(9) should be given at the rate of 25 c.c. per hour.

Calcium gluconate 10% .....100 c.c.
Sodium bicarbonate 7.5% ..... 50 c.c.
Dextrose 25% in water with
50 units insulin .....400 c.c.
Isotonic sodium chloride or 1/6 M sodium lactate—The volume of measured output.

G. Other methods of reducing plasma potassium.

1. Ion exchange resins(12-13) will withdraw potassium from the plasma but the sick patient may be unable to take them by mouth, and by rectum they form intractable impactions.

2. Peritoneal dialysis.

3. Artificial kidney dialysis.(7-11).

H. Management of the period of diuresis.

1. When renal function returns there is a rapid improvement if the patient is properly managed.

2. Output of urine during this stage may reach 3000-6000 c.c. in 24 hours and there is a flagrant waste of sodium and potassium.

3. The parenteral fluid replacement should be volume for volume with sodium chloride to which 1-2 cm. of potassium chloride is added.

4. When oral feeding is resumed, fluid may be taken ad lib but assurance of 4-6 gm. of sodium chloride and 1-2 gm. of additional potassium chloride is necessary for one week.

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THE TREATMENT OF ACUTE CRANIOCEREBRAL INJURIES

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THE objectives of treatment of acute craniocerbral injuries are fourfold.

1. The saving of life.
2. The prevention of infection.
3. The preservation of nervous function.
4. The restoration of anatomic structures.

FIRST AID

First Air Treatment consists of the maintenance of an adequate air-way in unconscious patients and the treatment of shock, especially if other injuries are present. Oxygen by intranasal catheter or BLB mask, caffeine in small doses, removal of wet clothing, rest, and transfusions with blood plasma or substitute are essential. Whole blood is necessary if there is excessive pain and blood loss from thoracic, abdominal, or extensive compound wounds of the extremities. Excessive manpulations for neurological examination, preparation of the head, and all other procedures not contributing to the patient's immediate welfare must be delayed until shock has been controlled. Open wounds are best treated by close clipping of hair, the application of a firm, dry, sterile dressing, and the use of penicillin intramuscularly. The patient should be transported to a hospital lying flat, on the side, or in the face-down position to promote the drainage of oral and nasal secretions. Air transportation is permissible. Travel is better tolerated at this stage than following operation; accordingly, immediate excavation to treatment centers is essential.

CLINICAL EXAMINATION

Observation of the following basic points has been found to be significant in estimating the extent of intra-cranial injury and in planning

the treatment:

I. **State of Consciousness.** The center of consciousness is believed to be in the peri-aqueductal gray matter of the brain stem. This area may be adversely affected by inadequate circulation due to (1) shock or (2) acute craniocerebral



John R. Green, M.D.

injury. Each patient follows a definite sequence of events in recovery or demise, and an understanding of this is helpful in estimating his progress.

(a) **Coma** — vital signs only, no response to pain, no reflex.

(b) **Stupor** — unconscious, vital signs, withdrawal response to pain, reflexes.

(c) **Restless Confusion** — resistive, disoriented, sometimes noisy.

(d) **Confusion** — quiet, cooperative, disoriented.

(e) **Automatic** — oriented, somewhat dazed, may ask same question repeatedly.

(f) **Lucid** — normal.

When the state of unconsciousness declines in spite of supportive treatment, it almost invariably means that these centers are being embarrassed by edema, petechial hemorrhages, or by compression. Neurosurgery is frequently urgent at this stage. Fifty cc. of 50% glucose is administered as an emergency measure to tide the patient over for a few hours.

II. **Respirations** are a reliable guide to the extent of injury.

(a) **Slow, deep, stertorous and irregular respirations of the** Cheyne-Stokes type indicate a **poor prognosis.**

(b) Respirations below 10-12 per minute usually mean extensive intracranial bleeding.

(c) Rapid, shallow, and labored breathing may indicate chest injury, encroachment on the air-way or may occur paroxysmally as part of the syndrome of decerebrate rigidity.

III. **Cranial nerve palsy** is common with basal skull fractures, especially the third, sixth, seventh and eighth. These patients may do well in closed head injuries, but usually do poorly in penetrating injuries which involve the base of the brain.

IV. **Eye-signs** are important.

Bilateral, dilated, fixed pupils are ominous signs. Recovery is rare indeed. A dilated pupil from the onset of the injury means immediate and direct injury to the third cranial nerve, usually due to a basal skull fracture. If the pupil dilates hours or days after the head injury, it usually signifies edema or hematoma on that side and may indicate emergency craniotomy.

V. **Paralysis, reflexes, and aphasia.** These abnormalities indicate localized cerebral injury. If they appear hours or days following the episode, they must be considered to be due to the development of an extra-dural, subdural, or intradural hematoma. Recovery may be accomplished by surgical treatment.

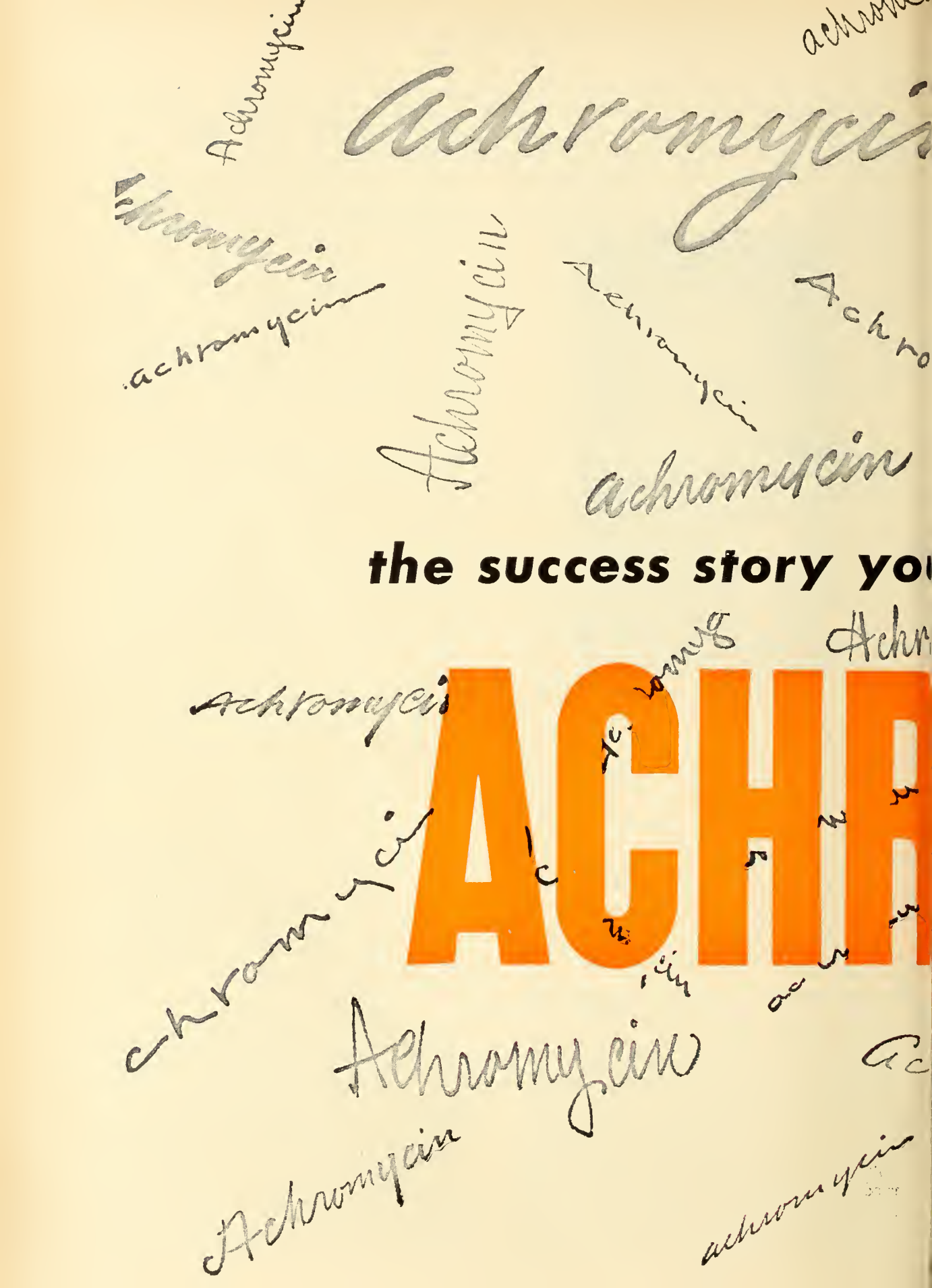
X-RAY EXAMINATION

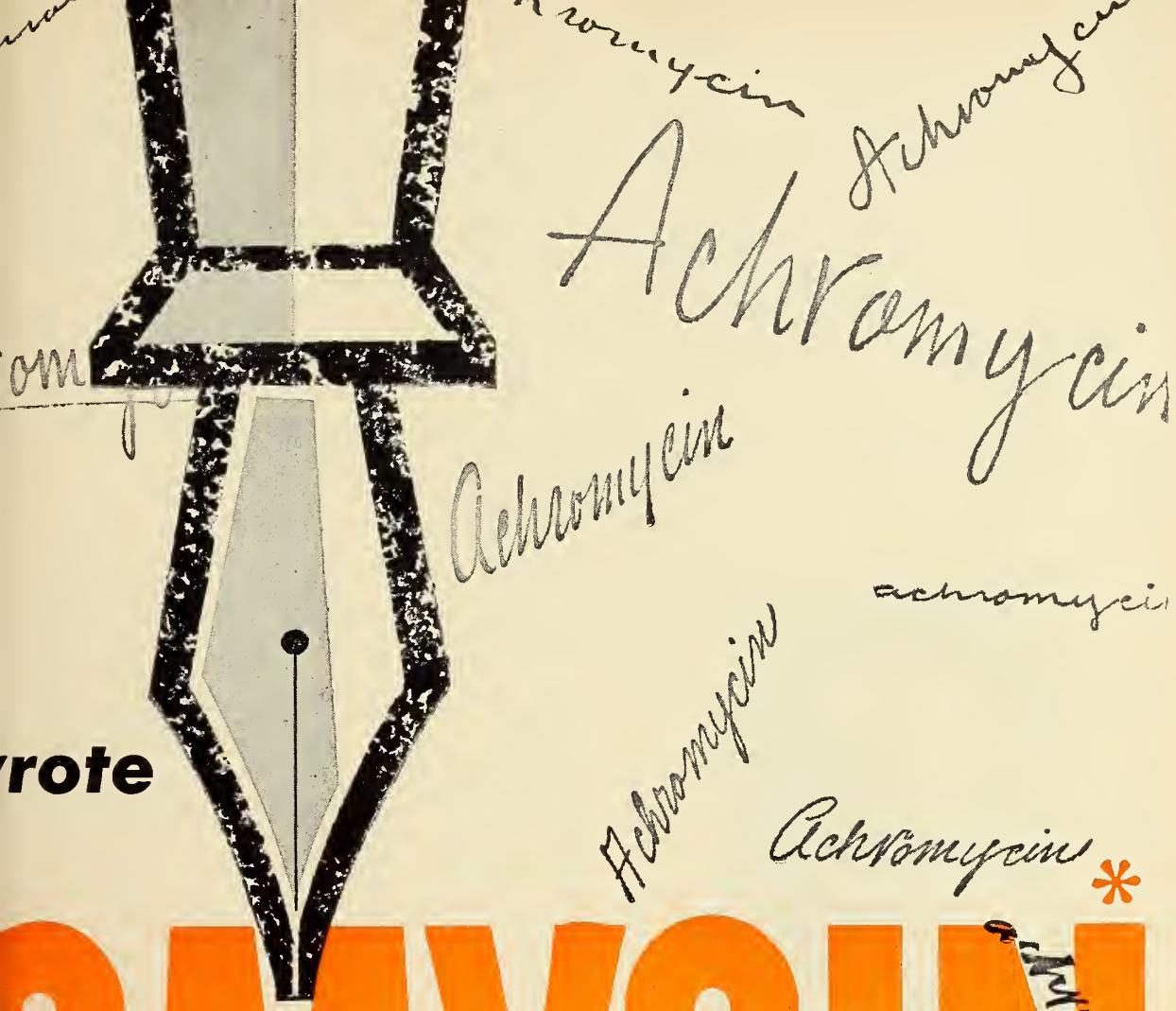
When the clinical examination has been completed, if the patient's general condition has stabilized, x-ray studies of the skull are made at once only if there is (1) a scalp wound, (2) unconsciousness, or (3) positive neurological signs. Trifling scalp lacerations may conceal extensive cerebral injury. X-ray examination preceeds surgical treatment.

HOSPITAL TREATMENT

It is beyond the scope of this article to discuss definitive hospital care of acute craniocerebral injuries, medical and neurosurgical. General principles to be considered include:

1. **Maintenance of oxygenation** by any means necessary (postural, air-way, endotracheal tube or tracheotomy).
2. **Prevention of infection** by the judicious use of antibiotics.
3. **Control of restlessness** by relatively non-


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depressing drugs (Paraldehyde, Serpasil) instead of using narcotics.

4. Management of water metabolism, utilizing relative dehydration for 24 hours only.
5. Maintenance of adequate nutrition, including feedings by Levine tube beginning on the fourth day if necessary.
6. Control of increased intracranial pressure by 50% glucose intravenously during the first 24 hours, and by evacuation of hematomata when indicated.
7. Early neurosurgical debridement of compound skull fractures, elevation of simple depressed skull fractures, and evacuation of extra-dural, subdural, and intra-cerebral hematomata on the basis of neurological signs.

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THE IMMEDIATE CARE OF EYE INJURIES FOLLOWING A MASSIVE ATTACK WITH HIGH EXPLOSIVES

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Sherwood Burr, M.D.

FOLLOWING a massive attack with high explosives, the majority of people who will sustain injuries to the eyes or eyelids will receive emergency treatment by physicians or surgeons other than ophthalmologists. The following information may help administer the necessary treatment until the patient can be seen by an ophthalmologist.

The type of injuries will probably fall under three headings:

I Physical Burns

II Direct trauma due to flying material, solid and chemical

III Extreme pressure either to the globe, head or chest.

A physical burn, the result of exposure to an extremely high intensity of radiant energy which is released in the form of infrared and visible light will cause flash burns (electric ophthalmia). This usually has no serious consequences. The onset of symptoms is always several hours delayed; the patient has a sandy feeling, later burning, lacrimation, photophobia and severe pain, sometimes to the extent that he can hardly open his eyes. It is advisable to search for possible foreign objects in the conjunctiva and cornea. The repeated instillations of ½% solution of Pontocaine® and cold compresses usually suffices to make the eye comfortable as the condition is self-limited and usually clears within 24 to 48 hours. Holocaine® and Epinephrine ophthalmic ointment is also soothing an occasional drop of an antibiotic solution can do no harm.

Byrnes* has shown that, "in especially clear air the nominal atomic bomb (20KT) can be expected to produce atomic chorioretinal lesions in humans' eyes up to 36 miles". There is no way to minimize the damage such chorioretinal lesions will do unless everyone has enough warning to wear dense filters similar to those required by the test organization of the Atomic Energy Commission. The filters transmit less than 0.5% of the visible light falling on them. Any retinal lesion so produced will result in permanent damage. We can just hope the macula is not damaged. The eye may develop a low-grade iritis or uveitis and dilatation of the pupil with 1% Atropine Sulphate or 1/5% Scopolamine HBr may be helpful.

The human lens is extremely sensitive to nuclear radiation and many radiation cataracts can

*Byrnes, Col. Victor A.: Chorioretinal Burns Produced by Atomic Flash, A. M. A. Arch. Ophth. 53:351, 1955.

be expected. This will not constitute an immediate problem.

Injuries as the result of direct trauma by solid material may produce lacerations of the lids. If such lacerations include the lid edge (tarsus) there will be a nasty v-shaped permanent defect unless the lid edge is approximated accurately and carefully, being certain to suture tarsus to tarsus and skin to skin and also the lid edges. Carry the sutures down the palpebral conjunctival side if this side of the wound is still not smooth. This laceration need not be sutured immediately.

Such trauma could use anything from simple contusion to actually penetration of the globe and in most extreme cases might result in loss of the contents of the globe.

Subconjunctival hemorrhages look more frightening than they actually are and require no treatment. They will gradually disappear in due times without residue.

Injuries which involve deeper structures of the eyeball, (cornea, iris, lens, retina, intra-ocular foreign objects and perforating trauma) are best referred to an ophthalmologist. Any large obvious protruding foreign object should be removed at once. For first aid all that may be required is to cover the injured eye with a sterile pad and give the patient an injection of an antibiotic and depending on the type of injury, tetanus and gas gangrene antitoxin.

Chemical injuries can be expected. Rather than wasting valuable time by attempting to find out whether the solution splashed into the eye was acid or alkali, it is wiser to proceed immediately by irrigating the eye profusely with physiological saline solution or even plain water, and continue doing so until one is reasonably certain all foreign or precipitated material has been washed out. The upper eyelid should be everted for close inspection and shreds of mucous or necrotic membrane should be carefully peeled off. Local anesthetics for pain, antibiotics, and hydrocortone will all be beneficial and if the nature of the chemical is later known, a mild neutralizing solution should be used frequently thereafter for several days. Local cold compresses, 15 minutes at a time and analgesic will help.

Pressure to the globe when severe, may cause intra-ocular hemorrhages. We could also expect a mild to severe commotio retinae and in case of severe injuries to the chest or head, we must lend an attentive ear to a patient who complains of loss or poor vision, as this may be Purtscher's retinal changes due to distant injuries. With all the above retinal changes, physical exertion should be avoided. B-complex intravenously is sometimes indicated as a supportive measure while the retina returns to normal.

PSYCHIATRIC ASPECTS OF CIVIL DEFENSE

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MAN'S USE of reason and logic in his technical problems is not equalled by his application thereof to his emotional ones. In the main, the "rational animal" is motivated by emotions. Reason, if applied at all, is usually secondary.

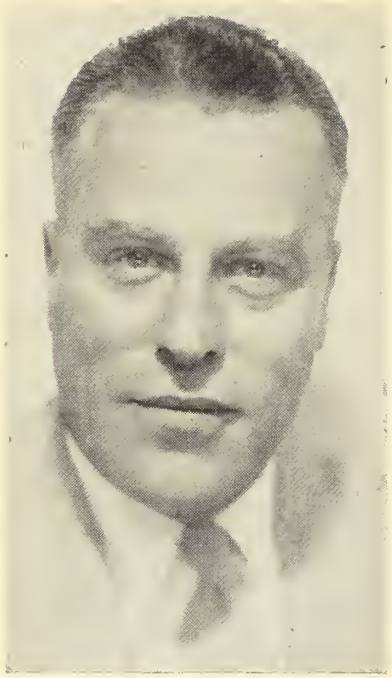
Thus war — a mass irrationality born of greed and fear — ever threatens. Reason is not yet strong enough a human attribute to guarantee its extinction — even when we know its new potential to be so terrible as to practically guaranttee our own.

Knowing this, the best we can do is try to apply reason secondarily — by planning adequate civil defense.

Atomic weapons have changed the tactical aspects of war in that — contrary to the past — armies no longer will shield the civil mass, but rather, the civil mass will be directly attacked. Thus, the civil population is in the front lines and only if it is able to sustain the shock will its military body be sustained by its will and productivity until it can make decisive use of its weapons.

Psychiatric problems of Civil Defense can be divided into the following categories for consideration:

I. Types of external stress to be anticipated.
II. Types of reaction that can be expected.
  (a) Individual reactions
  (b) Mass reactions
III. Prevention of
  (a) Individual psychiatric casualties
  (b) Disruptive group behavior
IV. Control of
  (a) Individual reactions
  (b) Disruptive mass reactions



Richard E. H. Duisberg, M.D.

I. The causes of external stress, the use of which in war may be anticipated are: high explosive, chemical, bacterial, atomic, thermonuclear, psychological warfare, and those which are as yet unknown.

The application of the stress may be sudden and unexpected. It may vary as to timing, type, intensity, duration and frequency.

II. (a) Individual Reactions

In some there will be normal fear with controlled, rational behavior. Others — and there are few pre-existing experiences upon which to base estimates of how many — will react with anxiety, flight, fury, apathy, depression, delinquency, immaturity reactions — (with regression to infantile behavior) or passivity and even denial of the situation to a psychotic degree.

All of these may be transient or chronic. They may occur at the time of impact, in the period of recoil, or in the post-traumatic period, as full awareness of the disaster and the altered environment develops.

At the time of impact some remain 'cool and collected', the majority are stunned and bewildered — or anxious. Some may display automatic behavior or inappropriate responses with confusion or paralyzing anxiety, uncontrolled screaming or crying.

In the recoil period — which may last several hours to a day — a return to self-consciousness and awareness takes place in the majority. Others now manifest anxiety, anger, crying, laughing or other disturbed overt behavior. There will be a need to talk out the experience to express anger, fear, despair and other feelings that result from the experience.

The post-traumatic phase will be marked by the more familiar clinical pictures: anxiety states, fatigue states, depressive reactions, recurrent traumatic dreams, rage reactions, etc. (Tyhurst, J. S., Individual Reactions to Community Disaster: Am. J. Psych. 107: 764-769, Apr., 1951.)

II. (b) Mass disruptive behavioral reactions, i.e.: 'Panic behavior' may be manifested in any or all of many patterns. Unusual emotional reactions are to be expected in the face of widespread and unprecedented destruction of property and life, disruption of community facilities, communication, police protection, transportation, sanitation and food supplies. The loss of adequate medical facilities in the presence of tremendous numbers of mutilated, dying and dead can arouse primitive disabling despair, and apathy and demoralization.

Panic, rioting, scapegoating of some degree is almost universal in serious disasters, where fragmentation of the group and loss of group identification occur due to regression to preoccupation with individual survival.

Imitative behavior and response to strong suggestion are uncritical reactions seen dramatically in mob panics. The famous Orson Welles broadcast: "The Invasion From Mars" illustrates this loss of critical discrimination between fact and fiction.

Rumors, by word of mouth, radio, newspaper or telephone — when combined with the strong suggestibility which exists in a crowd, may set off reactions of catastrophic proportions. The Detroit race riots of 1943 (Lee, Alfred M. and Humphrey, Norman D., Race Riot, Dryden Press, N.Y., 1943) were incited by rumors and resulted in the death of 34 people, the wounding of more than one thousand, wild lootings and beatings and the destruction of hundreds of thousands of dollars worth of property.

Reactions in areas remote from the attacked points will also occur. If Los Angeles were attacked, reasonable fears would be aroused in other more or less likely target areas with the production of natural — but asocial trends toward flight, concealment, hoarding and absenteeism from even vital industries.

Resentments and aggressions may become focused against the leaders or parts of the group — resulting in reactions varying from bitter criticism to riot or even revolt against constituted authority.

In panic, groups — as individuals behave in reflex, unorganized, non-constructive and illogical patterns.

III. (a) Prevention of individual psychiatric casulaties.

The level of emotional maturity and the threshhold of tolerance to stress of each individual depends largely upon the experiences of early life. Where the majority of parents are tolerant, realistic, intelligent and responsible members of a democratic society, one would have reason to expect subsequent generations to be, in the main adaptable, emotionally secure and intelligently self-disciplined.

That there is room for improvement in our culture is attested by the high percentage of psychiatric casualties in the Armed Services in World War II. Every physician can, by bearing in mind his status as a father surrogate and counsellor, do much to aid his patients in gaining mature and realistic perspectives, values and insights. A personal sense of security ensues not from the wishful pursuit of "security" — but rather from the realistic acceptance of the fact that there are no absolutes, that insecurity is inherent in the flowing processes of time and life.

III. (b) Prevention of disruptive mass reactions.

Knowledge and understanding of a situation facilitates its solution. Groundless fear of an eclipse of the sun produced panic in primitive people before the rise of astronomy. The "mysterious" flying saucer provoked a widespread obssessive interest which contained elements of panic.

Information concerning eventualitties of war should be disseminated calmly and realistically, not with urgency or drama. Crying wolf too loud or often should be replaced with clear and explicit explanation of the threat and the methods of defense against it.

Basic information regarding the effects of radiation and means of minimizing its danger should be publicized. Knowledge and realistic appraisal is more reassuring than uncertainty, doubt and ignorance of what to do, no matter how harsh the facts.

Once having informed the public about the dangers and outlined the steps for combatting them, concrete steps and constructive rehearsals should be provided. Leadership, shelter provisions, supply, transportation, communication, fire control and other facilities and functions should be planned and publicized. People should have a clear cut idea of what they should do in time of crisis — else perplexity and confusion will seize them.

An appreciation of the situation will permit normal fear to replace anxiety. A plan of action — there is always something to do to improve a situation — will provide for purposive rather than aimless behavior.

Organization will provide leadership. Confidence in leadership — from block leader to president will enable individuals to identify with those in responsible positions. Thus each feels the group responsible for him and himself responsible to the group. Defective leadership was found on many occasions to be the basis for relatively high psychiatric casualty quotients in certain military units.

Socio-economic organization with working out of improved systems of mutual aid between the rural areas (who need industrial products) and metropolitan areas (who depend on import for food, fuel, water, etc.) is being given consideration. Stock piling, auxiliary transportation, emergency communication systems and the like will be reassuring factors and thus preventative of anxiety. (GAP of APA Report No. 19, An Introduction to the Psychiatric aspects of civil defense.)

IV. (a) Control and treatment of individual casualties: Military experience would here be directly applicable.

Early interruption of severe acute reactions is the most effective approach.

Despite drawbacks, heavy sedation with barbiturates makes control possible with minimal medical supervision.

During the first three or four days first aid will be the doctors' chief duty, irrespective of specialty — but some psychiatrically supervised "exhaustion centers" should be planned and operated near other medical installations.

IV. (b) Control of disruptive mass reactions will have been largely accomplished if preventative measures have been taken. But civil defense planning should assume the possible development of panic and should include plans for its control. This, largely, is a function of central

civilian authority (police and peace officers). Medical and psychiatric contributions through adequate liason will be considerable.

When troops must evacuate in the face of enemy actions, a rout is an imminent threat.

Analogously, civilian evacuation after catastrophy must be carefully controlled and regulated to avoid disruption of transport, clogged roads, dissolution of family groups. A panicked crowd is a disorganized herd, the danger of uncritical response to apparent avenues of escape is great. But panic groups fatigue and then under strong leadership, integrating group influences can be invoked. For this reason road blocks at intervals along routes of egress are adviseable. Here the stream of people can be diverted into assembly points where accurate information as to the nature and extent of the attack can be provided. Ablebodied individuals can be organized into squads to be assigned specific rescue missions. Food, shelter and medical care can be provided.

Individuals manning such assembly points should be well selected. They should be capable of dealing reassuringly and authoritatively with the not inconsiderable hostility they may be expected to encounter in individuals or crowds.

Information should be disseminated through available radio stations, sound casting apparatus, helicopters, etc., accurately calmly and as fast as facts are clear to a pre-determined central authority. Unauthorized broadcasting should be stopped. Instructions and data should be reduced to simple, direct and factual terms, which can most easily be assimilated by the depressed, fearful, resentful victims of the disaster.

These comments represent an attempt at anticipating individual and group reactions to military stresses for which practically no precedent exists. It is therefore necessary to bear in mind that additional reactions and problems not foreseen, because no previous experience can be drawn upon, may well be encountered. The elementary mechanisms and patterns, however, of human reaction to stress remain an intrinsic part of the organism irrespective of the stress. To paraphrase: An ounce of anticipation and preparation is worth . . . .

PUBLIC HEALTH ASPECTS OF CIVIL DEFENSE

By Hugh H. Smith, M.D., M.P.H.
Tucson, Arizona



Hugh H. Smith, M.D.

PLANNING for the protection of the civil population in the event of enemy attack must be a continuing process geared to the ever increasing lethal potentialities of new weapons. Protective measures that appeared adequate only three or four years ago are now almost obsolete. Winston Churchill informed the House of Commons a short time ago that while the atomic bomb with all its terrors, was not outside the scope of human control, the hydrogen bomb had revolutionized the entire foundation of human affairs and placed mankind in a situation that was both measureless and laden with doom.

Previous planning to a considerable extent had called for measures of protection on a local basis. What is now clear is that plans for the mutual aid of one community to another must take precedence.

Regarding public health one must take a broad view. Physicians and surgeons in their practice are concerned with the health requirements of individuals, while the public health worker deals with the medical problems of humanity in groups such as households or communities. In Civil Defense public health im-

pinges on all aspects of the program, especially such vital matters as the care of evacuated populations, organization of defense against biological or chemical warfare, the interplay of emergency medical and health services, preservation of public morale, combating epidemic disease, and in the organization of teams and the training of personnel to carry out all of these protective services. There should be no conflict of defining the responsibilities of medical men and health workers. In the event of an H-bomb attack there will be all too few professionally trained individuals. Physicians and surgeons skilled in the care of the sick and injured will have to man first aid stations and hospitals to strive to save life, diminish suffering and prevent disability. Stated in outline form, the principal responsibilities of public health agencies in Civil Defense are:

I. To minimize the effects of an enemy attack upon the civilian population.

a. By formulation of plans and agreement on plans with health agencies in contiguous areas.

b. By recruitment and training of auxiliary personnel.

c. By procurement and stockpiling of necessary supplies and equipment.

d. By education of public in taking emergency protective measures.

II. To deal with the immediate emergency conditions following an attack.

a. By organization of flow of casualties to first aid posts and hospitals.

b. By striving to protect survivors from additional exposure to radioactive materials and to detect those already affected.

c. By combating panic and other mass emotional reactions.

d. By detection and recognition of radiological, chemical or biological hazards.

e. By initiating records of vital statistical data, e.g., living casualties, deaths and births.

III. To guard the health of displaced populations and to assist in the restoration of vital utilities and facilities in the devastated areas.

a. By maintenance of sanitation in emergency housing areas.

b. By preventing spread of communicable disease.

c. By supervising sanitation of food, water and milk supplies.

d. By detection of delayed radiation sickness.

e. By maintenance of records of vital statistics.

f. By assisting to restore the habitability of the devastated area.

The most important factor in the success of a Civil Defense program is gaining the confidence of the public. This can only be done by a convincing demonstration that intelligent plans have been made and that all necessary steps have been taken for the smooth implementation of these measures in the event of an attack. Perhaps it is in the formulation of these plans that public health can make its greatest contribution. Health officers are accustomed to thinking in community wide terms. What is now required is the imagination to prepare for disaster situations of an unprecedented scale and possibly of a mysterious origin.

In terms of any realistic preparation for H-bomb warfare, it must be assumed that local, state or even the national government may be completely disorganized for a period of a few days. As put by the London Economist, "this leaves the country vertebrate and smashable, whereas it must have the survival ability of a worm cut in sections". From this concept it will readily be seen that planning of a completely different order must now be contemplated. In this undertaking public health has much to offer and a heavy responsibility that must be assumed.

The following columns that appear regularly in Arizona Medicine are omitted due to this special Civil Defense issue:

ON VACATION THIS MONTH

PHOENIX CLINICAL CLUB

RX., DX., AND DRS.

ARIZONA PHARMACEUTICAL PAGE

NOTES FROM THE EDITORS' PEN

CHEST TRAUMA

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Introduction

THE thorax represents a large exposed portion of the body and unfortunately is particularly vulnerable to trauma. All the vital structures lying within the chest are subject to injury. Trauma of the thorax may produce a variety of injuries involving not only the soft tissues and bony cage, but also the lungs, tracheobronchial tree, heart and pericardium, great vessels, esophagus, diaphragm and thoracic duct. The possibility of visceral injury in all cases of thoracic trauma must be considered. Fractures of the thoracic cage may be easy to recognize but injury to the vital organs within may be more occult or may be so severe as to be rapidly fatal.

Some understanding of the mechanics of respiration and of cardiorespiratory physiology is essential for success in the management of thoracic injuries. At the outset of this discussion a few general remarks in this regard will be made. Further details shall be included in the description and discussion of specific injuries. In general all technics and modes of management are those applicable to the operated thorax since elective thoracotomy creates a large open wound of the chest which is treated by closure followed by certain principles in the postoperative care. This method is followed in the management of open injuries to the chest, i.e., they are changed to essentially closed wounds.

Surgical Physiology

Normally a negative tension exists within the plural spaces surrounding the lungs. This tension is dependent upon an intact thoracic cage. Defects in the bony cage or pleural surfaces change the negative tension to one near or at atmospheric pressure thus interferring with the normal respiratory movements of the lung.

Abnormal changes in pressures within the pleural cavity may come about by air entering from without as in open injuries to the chest wall, or from within due to defects in the lung surface and any combination of these. Rupture of the esophagus, or hollow viscus that abnormally may communicate with one of the pleural spaces produce similar findings.

When air escapes from the lung and there is no outside communication, a closed pneumothorax exists. This may be under tension or in combination with fluid (hydropneumothorax). There follows a collapse of the lung due to the mechanical displacement by air and/or fluid which adversely affects respiration.

Embarrassment to respiration also occurs when a flail chest (multiple fractured ribs) exists. Under such circumstances, on inspiration, there is an invagination or falling in of the injured segment and on expiration the part protrudes or bulges outward. A portion of the tidal air moves from one lung to the other with each respiration and in addition there is created a pendulum motion of the mediastinum (see below).

Defects in the chest wall and pleurae occurring with open wounds of the chest permit air from the outside to rush into the pleural cavity and the affected lung collapses. As the intact chest wall on the opposite side expands on inspiration, the mediastinum is pulled over to the same side, thus the uninjured lung fails to completely expand. On expiration the air passes through the rent in the chest wall and the mediastinum swings in that direction. This to and

fro motion is called mediastinal flutter or pendulum motion. This phenomenon results in useless interexchange of deoxygenated air between the lungs, alterations in circulatory dynamics and partial pinching of the great vessels. If these abnormalities are severe or go unattended they may rapidly prove fatal.

Treatment

Immediate Treatment.

All patients with serious chest injuries should have definitive care as quickly as possible. When necessary, the patient should be transported in semierect position with the injured side dependent. The restoration of cardiorespiratory function is imperative and treatment in that direction instituted promptly.

All open or sucking wounds must be closed by tamponing with surgical dressings preferably or any materials such as pillows, sheets or dressings of any sort in an emergency. If air tight closure is accomplished egress of escaping air from the injured lung should be afforded with waterseal and tube drainage (See Fig. II).

Tension pneumothorax or hemo pneumothorax must be promptly diagnosed and treated by needle or tube drainage. Rapidly accumulating tissue emphysema should be given an escape vent.

Patent airway is a primary immediate goal. This may best be accomplished by tracheotomy performed on the spot.

Careful evaluation and first aid given to concommitant injuries elsewhere.

Recognition of cardiac tamponade and aspiration until further therapy can be administered if indicated.

Additional Treatment.

1. Shock and control of hemorrhage. Shock may be manifest early or it appears sometime later. Intravenous therapy should be under good control for these patients tolerate poorly excess intravenous fluids especially saline. Whole blood should be used when available otherwise any other suitable agent to control blood volume is the next choice such as plasma or dextran. Control of hemorrhage should be immediate according to standard surgical principles. It should be remembered that intrathoracic and thoracoabdominal bleeding may be of such magnitude that operative intervention may be necessary before the shock state can be overcome.

2. Pain. The relief of pain helps minimize shock, promotes better respiration, enhances ability to cough and relieve apprehension. Demerol is well tolerated and is the drug of choice given in frequent doses 50-100 mgs. q. 2 h. Barbiturates helps, and the use of Thorazine may reduce the amount of narcotic used. Intercostal and paravertebral nerve blocks with procaine may be of great benefit.

3. Antibiotics should be given prophylactically to prevent infections.

4. Intestinal distention and a dilated stomach are frequently present with severe chest injuries and when eliminated by proper management will add to the patient's ventilatory capacity as well as general comfort.

5. General hygienic measures such as oral hygiene may help prevent infection and promote early recovery. Administration of TAT or toxoid as indicated should be done without fail.

6. Debridement of wounds of the chest should be accomplished as soon as possible. If the wound is large and of the open or "sucking" variety, endotracheal intubation is usually neessary.

7. Open thoracotomy is seldom necessary in chest wounds, in fact if it is performed unnecessarily the morbidity and mortality figures rise very rapidly. During World War II less than 25% of wounds required exploration.

8. Certain conditions demand open thoracotomy, namely:

(a) The thoracoabdominal wounds.

(b) The presence of large foreign bodies intrapleurally or within the lung, heart and mediastinum.

(c) Tear or fracture of a large segment of the tracheobronchial tree not controlled by simple waterseal drainage.

(d) Uncontrolled hemorrhage especially of undetermined origin.

(e) Cardiac tamponade.

(f) For chyleothorax not responding to simple therapy.

9. Evacuation of air and fluid from the chest with the goal of rapid and complete reexpansion of the lung, best accomplished by waterseal drainage and mechanical suction when indicated and if available.

Special Treatment.

Chest injuries are classified for convenience as follows:

I. Nonpenetrating (not entering pleural space)

A. Soft tissue (requires no special mention — treated as elsewhere).
B. Skeletal
C. Visceral
1. Lung and pleura
2. Cardiac
3. Mediastinal
4. Diaphragmatic
5. Traumatic asphyxia
6. Blast injury

II. Penetrating (entering pleural space).
A. Lacerations of soft parts
B. Skeletal — compound fractures
C. Visceral
1. Lung and pleura
2. Cardiac
3. Mediastinal
4. Diaphragmatic

III. Thoracoabdominal injuries

There is considerable overlapping of specific therapy for nonpenetrating and penetrating wounds of the chest since wounds of the various structures within the thorax are similar whether produced by open or closed mechanisms. The actual methods of management differ but little as far as basic principles are concerned and therefore can be discussed together. However, they may vary in degree, usually the open wounds are more severe.

Among the more common serious injuries of the thorax in civilian life are those involving the chest cage or bony framework surrounding the vital structures. The more serious of these are frequently referred to as "crushed chest", "flail chest", and "stove-in chest". These are characterized by multiple, frequently comminuted rib fractures, unilateral and/or bilateral, and parodoxical motion of the injured areas with associated mediastinal flutter. In about 75 per cent there is trauma to the underlying lung with accompanying pneumothorax or hemothorax.

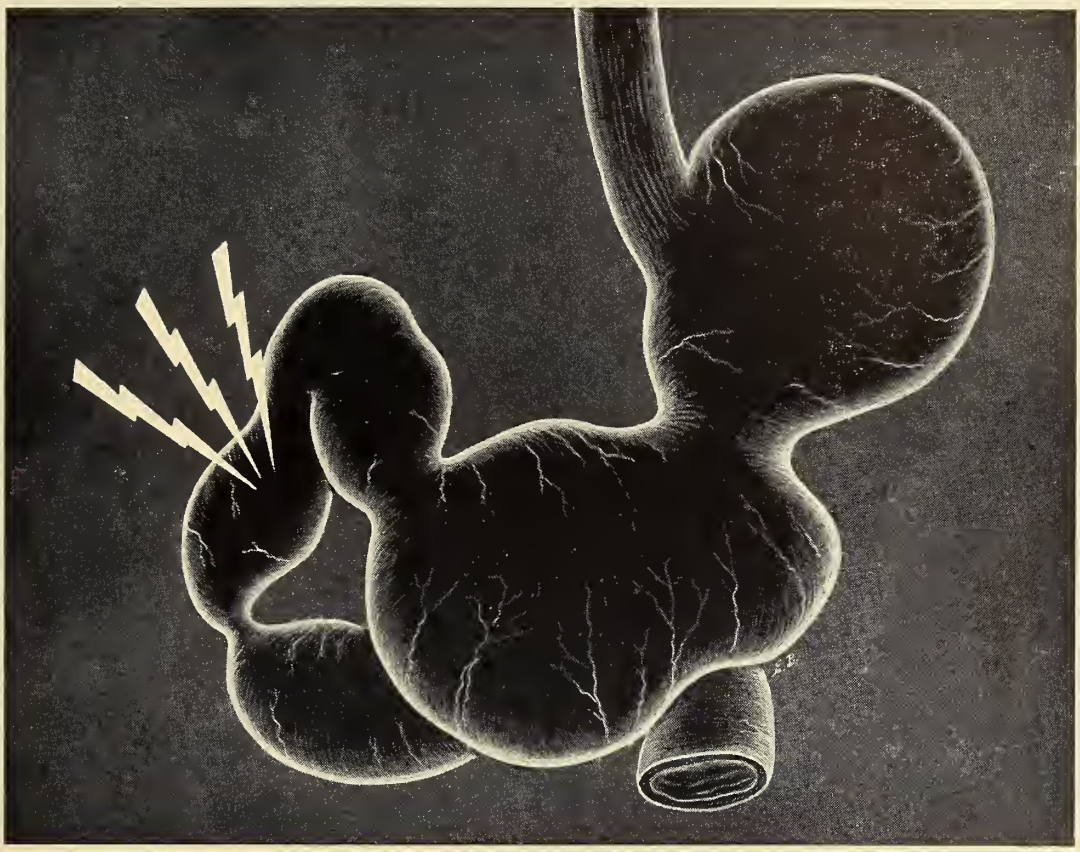
Emphasis is directed to a few simple therapeutic procedures which may contribute to the successful management of patients who have sustained severe crush injuries of the chest. It would appear that the measures taken towards therapy should remain as simple, concise and brief as possible since the patients in question are frequently moribund from shock due to concomitant injuries, blood loss and disturbances in cardiorespiratory physiology. Uncomplicated technics applied to the chest problems also permit simultaneous and more prompt attention to be directed to concomitant injuries to other areas.

Crush injuries seldom demand major surgical intervention unless there is convincing evidence of concomitant laceration or rupture of significant branch of the tracheobronchial tree, severe bleeding of undetermined origin, protracted cardiac tamponade, rupture of the thoracic duct, or traumatic laceration of the esophagus. There has been some suggestion of extensive surgery in these critically injured patients in the form of wiring or pegging, the fractured ribs to accomplish immobilization. It is doubtful that procedures of such magnitude are necessary when it has been show that less drastic measures will accomplish the desired results. No procedure should be performed that does not actually serve to preserve the patient's life and hasten his recovery and certainly not one that would jeapardize it. Definitive surgery, generally speaking, should be withheld until the patient's vital functions are well stabilized.

Many measures of management of chest injuries are offered which prove to be deficient to some degree as evidenced by the number, variety, and modes of therapy recommended. These include strapping and fixation of the mobile segments of the thoracic cage by using steel wire or tenacula. Open pinning of the ribs has been recommended but requires extensive procedures. The use of the Drinker respirator has very limited but specialized use.

No standardized method of treatment accomplishing elimination of parodoxical motion of the chest wall can be offered. This is readily understood when it is realized that a variety of physiopathological events occur in serious injuries of the chest. One or several complications such as hemothorax, pneumothorax, tension pneumothorax, paradoxical motion of the chest wall, mediastinal emphysema and "wet lung" may predominate in any particular case. However, immediate attention to certain basic principles of therapy in their regard will help simplify the most complex combination of findings. The principles of therapy are to combat shock and control hemorrhage, eliminate paradoxical motion, maintain a patent airway, promote early and prompt reexpansion of the lung, control pain, relieve dilatation of the stomach and abdominal distention and prevent the appearance of infection with the prophylactic ad-

PRO-BANTHĪNE FOR ANTICHOLINERGIC ACTION



Abnormal Motility as the Cause of Ulcer Pain

Until recently the general opinion was held that ulcer pain was primarily caused by the presence of hydrochloric acid on the surface of the ulcer.

Present investigations[1,2] on the relationship of acidity and muscular activity to ulcer pain have led to the following concept of its etiologic factor:

"... abnormal motility[2] is the fundamental mechanism through which ulcer pain is produced. For the production and perception of ulcer pain there must be, one, a stimulus, HCl or others less well understood; two, an intact motor nerve supply to the stomach and duodenum; three, altered gastro-duodenal motility; and four, an intact sensory pathway to the cerebral cortex."

Pro-Banthine® has been demonstrated consistently to reduce hypermotility of the stomach and intestinal tract and in most instances also to reduce gastric acidity. Dramatic remissions[1] in peptic ulcer have followed Pro-Banthine therapy. These remissions (or possible cures) were established not only on the basis of the disappearance of pain and increased subjective well-being but also on roentgenologic evidence.

Pro-Banthine Bromide (Beta-diisopropylaminoethyl xanthene-9-carboxylate methobromide, brand of propantheline bromide) has other fields of usefulness, particularly in those in which vagotonia or parasympathotonia is present. These conditions include hypermotility of the large and small bowel, certain forms of pylorospasm, pancreatitis and ureteral and bladder spasm.

1. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: A Clinical Evaluation of a New Anticholinergic Drug, Pro-Banthine, Gastroenterology *25*:416 (Nov.) 1953.

2. Ruffin, J. M.; Baylin, G. J.; Legerton, C. W., Jr., and Texter, E. C., Jr.: Mechanism of Pain in Peptic Ulcer, Gastroenterology *23*:252 (Feb.) 1953.

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ministration of antimicrobial agents. Good judgment dictates that after a quick but thorough evaluation of the patient attention will be directed to the most pressing problems at hand in order of importance in attending the individual.

Patients with chest injuries under discussion present a more or less uniform clinical picture. There is usually some degree of shock as well as cyanosis associated with a rapid, sometimes feeble pulse. Respirations are shallow, grunty, rapid and in the conscious patient are accompanied by marked pain and apprehension. On palpating the chest bony crepitus is easily elicited and in these areas paradoxical motion is apparent. The tracheobronchial components contain thickened tenacious secretions which are often bloodstained with associated injury of the pulmonary parenchyma and bronchial system. When the secretions reach such a volume as to plug the bronchial divisions atelectasis results. The impacted secretions, atelectasis and injured lung are recognized as the "wet lung" syndrome. Because coughing is painful and ineffective atelectasis is unrelieved and a greater respiratory effort is demanded. This results in more marked paradoxical motion of the chest wall. Tidal exchange is further embarrassed since a portion of the deoxygenated dead space gasses in the involved areas are shunted into the uninvolved zones. Thus a vicious cycle is established; the greater the ventilatory demand the more marked is the paradoxical motion with the increased respiratory effort.

The use of an endotracheal tube, aspiration by tracheal suction, bronchoscopy, and tracheotomy are readily available methods in establishing and maintaining a clear airway.

Transnasal catheter suction requires a minimum of equipment and should be accomplished without delay to relieve a hazardous situation when excessive tracheobronchial secretions are in evidence. Every interne and resident should become proficient in carrying out this mode of treatment for it is not only applicable in chest trauma cases, but useful in all types of postoperative surgical patients. Although this method is efficient initially, it requires frequent repetition producing trauma to the nares and at times exhausts the patient when with repeated efforts the catheter does not readily enter the glottic chink. Also, it is sometimes questionable whether or not the catheter can be directed to sufficient length into the bronchus and into the desired side. A suggestion in regard to the latter is to turn the head decisively to one side and then the other as this maneuver directs the catheter into the bronchus opposite the side to which the head is turned.

An endotracheal tube can be passed through the nares or directly through the mouth with the aid of a laryngoscope. This offers an efficient method of cleansing the tracheal bronchial tree but for apparent reasons it is not tolerated for any extended period. However, it might serve until other equipment is forthcoming.

By bronchoscopy aspiration can be performed efficiently and under direct vision but all are not trained in endoscopy and more elaborate equipment is needed. Aspiration by this method likewise requires repetition. Its greatest objection lies in the manipulation required of the patient which is poorly tolerated. Any strain or effort on the patient's part increases the parodoxical motion and if there is added excitement and struggling as well as poor relaxation a chain of events may be set off that might terminate fatally. Crushed chest patients have low reserves and any unnecessary expenditure of effort on their part might be sufficient to push them beyond their limits of physical tolerance.

Both tracheal suction and bronchoscopy require manipulation and movement of the patient which may be detrimental to concomitant injuries to the head, spinal column, and exteremities.

Tracheotomy combines all the gains, purposes and benefits of the aforementioned methods of aspiration and permits the nursing staff to assist in constantly maintaining a clear airway. It can be accomplished quickly, on the spot with very little manipulation and disturbance to the patient.

Tracheotomy not only permits maintenance of a patent airway through frequent, easy suctioning but with it paradoxical movements of the mobile segments of the chest wall are noticeably decreased. Pain is likewise relieved through diminished movements of the loose thoracic cage and by lessened respiratory efforts resulting from decreased resistance to inspiration and expiration. Greater effective tidal ventilation also is brought about by a reduction in the physiological dead space.

Treatment of patients under discussion de-

mands immediate evaluation of all the problems presented. An x-ray of the chest is mandatory for although the diagnosis may appear obvious on physical examination, it may be misleading and a portable x-ray view may be a lifesaving measure. This can be obtained without interrupting treatment.

Tracheotomy is performed either in the emergency station or at the bedside on the least provocation. A good rule concerning tracheotomy is, if it is considered a means of therapy, it should be done then and not delayed by a period of fruitless procrastination.

Following tracheotomy or lesser procedures as indicated the hemithoraces are then looked after. Usually one side has received more trauma than the other, but in any event if by x-ray examination one or both present evidence of hemothorax, pneumothorax, or a combination of these complications, immediate closed thoracotomy is performed. This again is done at the location of introduction to the injured patient. Preferably a trocar and cannula are used but they are not absolutely necessary. It is important to use a catheter of size 20 to 22 French with two holes in its tip. If a trocar is not available a stab wound in the skin followed by blunt dissection with a hemostate will suffice. (Fig. 1).

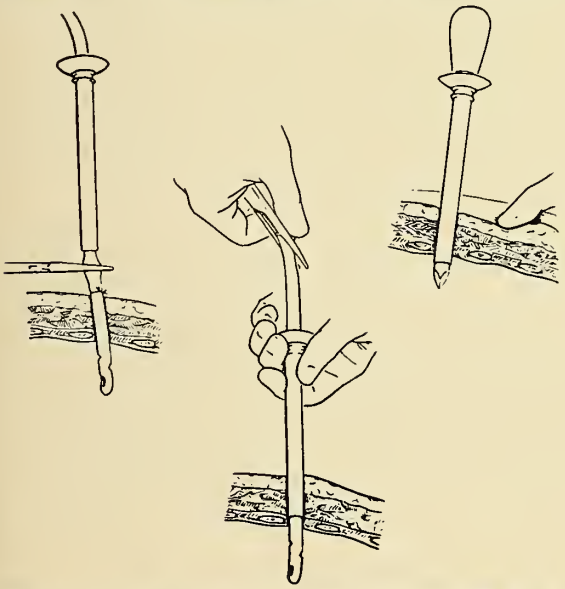


Figure 1. The uppermost view depicts the trocar and cannula introduced through a short superficial incision in a convenient interspace. The middle view shows the trocar withdrawn and a catheter being introduced through the cannula. The lower view shows the catheter in situ and the cannula being withdrawn over the catheter.

After gaining entrance into the pleural space by this method, the catheter over the end of the hemostat is then thrust through the incision into the space. The catheter is connected immediately to a water seal drainage bottle (Fig. 2). The anterior second interspace or a convenient interspace in the axillary region lend themselves readily to this procedure.

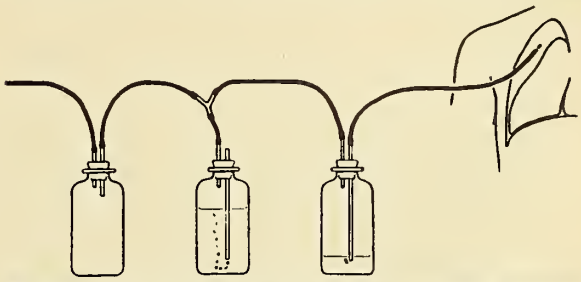


Figure 2. This drawing illustrates a typical water-seal drainage with suction applied to the water-seal bottle. It is to be noted that the bottle nearest the patient contains a tube beneath the water level which is connected with a tube emerging from the drained chest. This one bottle may suffice in many instances for simple drainage; however, if suction is needed, the middle bottle is added. The other bottle is a simple trap bottle to avoid water getting into the suction line. The middle bottle is inserted as a means of controlling the suction. It is to be noted that a long glass tube extends below the surface of the water some distance and the other end is open to the atmosphere. When suction is applied to this bottle through the illustrated connections its tension is determined by the distance the tube is placed under the water. For example, if the tube extends below the water level 20 cms., and suction reaches this particular tension then air enters to break the suction at any tension above this level. By this means a regulated, consistent suction can be applied merely by regulating the distance the tube is inserted beneath the surface of the water; usually 8-20 cm. water tension is sufficient.

When a hemothroax exists and the proximity of the lung is in question, a tracheotomy tube with its blunt stylet fitted into place, to avoid injury to the lung, can be inserted through a stab wound. Another advantage of this maneuver is that the tube can be directed to any region by pointing the tracheotomy tube in the desired direction within the pleural space.

Pain is usually controlled by frequent doses of Demerol (if necessary every two hours) beginning with 25 to 50 mg. and increasing it in increments of 25 mg. until the patient is relieved. Intercostal block has been practically eliminated by this regimen. To accomplish a satisfactory nerve block, good positioning of the patient is necessary and if such manipulation

can be avoided, the patient will profit by it. A hastily and inaptly performed intercostal nerve block can also add to the accumulated difficulties if a pneumothorax is inadvertently produced.

The remainder of the patient's management is similar to that given most thoracic surgical patients and full attention can be diverted to concomitant injuries.

When tears or punctures in the underlying lung are large and air leakage rapid, various types and degrees of suction can be attached to the water seal drainage system. If future findings demand, enzymatic therapy should be instituted, pockets aspirated, or additional closed thoracotomies performed. Definitive procedures are carried out after the patient's condition has stabilized to the point of accepting them without undue risk.

Open Wounds. These may be penetrating, lacerating or perforating. The wounds may be small in diameter or there may be large chest wall defects with exposed underlying viscera. It is obvious that vital structures cannot be injured too severely or the patient would not reach the point of available treatment. Usually if a defect exists lacerated lung with injured chest wall and pericardium and diaphragm are seen through the sucking wound.

The treatment depends largely on the degree of injury. Superficial wounds are treated as elsewhere by debriding, cleansing and suturing. If the pleura has been entered it is necessary to drain the pleural space. If intercostal bleeding is apparent it is repaired by operation. Bleeding from simple laceration or injury to the lung is self-limited and is treated as a closed injury after the chest wall is closed.

Large sucking wounds offer the problem of the wound itself in addition to a wide open hemopneumothorax and associated derangement in cardiopulmonary physiology. Emergency treatment consists of closing the wound by dressings and suture technics until definitive care is available. The latter consists of debridement, surgical attention to injured viscera and plastic or prosthetic closure of the chest wall. Retained missiles larger than one centimeter are usually removed especially if they lie near some vital structure. As emphasized previously after the open wound has been converted to a closed one, the management is the same as for the latter.

Chylothorax. This is fairly uncommon. The sign and symptoms are those of hydrothorax and the diagnosis is established by thoracentesis and examination for chyle. The treatment is usually conservative, namely, repeated aspirations along with high protein diet. Closed intercostal drainage may suffice in more difficult cases. Occasionally thoracotomy with ligation of the thoracic duct is found to be necessary.

Diaphragmatic Hernia. Rupture of the diaphragm should be considered in all severe injuries to the chest. Open wounds readily reveal defects of the diaphragm; however, in closed injuries the defect may be less obvious and barium studies should always be done before the patient is discharged from care.

Thoracotomy is necessary for its repair.

Mediastinal Injuries. Severe mediastinal injuries are seldom seen since this group usually succumb before treatment can be instituted. The main cause of death being hemorrhage from the great vessels. Occasionally mediastinal emphysema is severe enough to cause symptoms such as dysphagia, dyspnea and hoarseness. This is best treated by a low collar incision in the neck and dissection of the anterior mediastinal tissues from the sternum (pretracheal space) thereby releasing any trapped air that may be producing significant pressure symptoms. Ordinarily this can be accomplished simultaneously with tracheotomy. It is important not to suture a tracheotomy wound for just such an eventuality.

Esophageal Injuries. These are rarely seen with closed injuries but when present must be repaired promptly by thoracotomy. The signs and symptoms are there of a hydropneumothorax with severe pain and prostration. Very few esophageal injuries are seen with open wounds of the chest since adjacent vital structures are injured along with the esophagus and therefore the patient succumbs before aid is able to be offered. Those that live are managed as above.

Heart Injuries. All degrees of trauma may be seen from superficial contusion to laceration and penetrating wounds. Contusions behave much like infarctions and can be managed in similar fashion. Lacerations must be sutured.

Hemopericardium is treated by repeated aspirations or by thoracotomy with repair of the heart wound. Cardiac tamponade must be

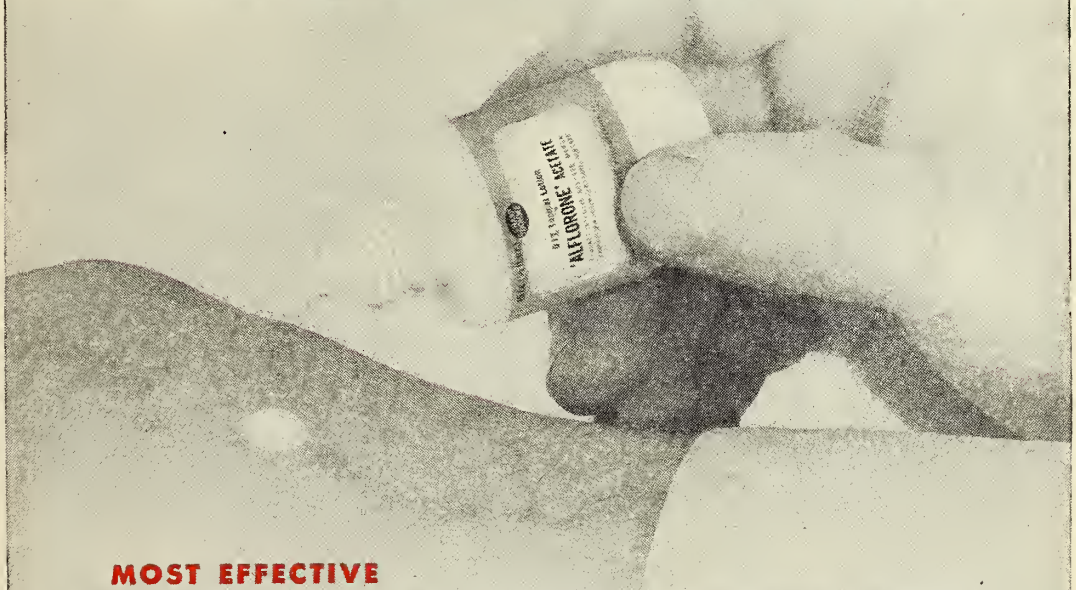
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TOPICAL LOTION

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considered in all wounds in and about the midline or adjacent to the mediastinum. The signs of cardiac tamponade are rapid, weak, feeble pulse, decreased systolic pressure, increased venous pressure and narrowing of pulse pressure. It must be remembered that contusions may produce bleeding within the pericardium from the injured heart muscle.

Traumatic Asphyxia. The accepted cause of this condition is sudden compression or crushing injury of the thorax and abdomen for sufficient time to retard or completely halt respirations. Unconsciousness may be transient with possible disturbance in vision and hearing. The patients exhibit various degrees of violet-blue to bluish-black discoloration of the face and neck. In the majority of victims the clavicles form the lower limits of discoloration. The bluish color begins to fade in 2-5 days and it may take 2-4 weeks for clearing to become complete.

Fracture of the sternum. This may occur with open or closed injuries of the thorax or may be infrequently present without fractured ribs. Diagnosis is not difficult what with the protruding type of deformity. Treatment is like that given fractured ribs with some modifications. Hyperextension of the neck and thoracic spine is used to aid in reduction. Once reduced realignment is seldom necessary to repeat. Rarely open reduction is required.

Blast Injury. This is a form of chest injury which occurs in individuals closely exposed to detonations of high explosives. The injury may be fatal without much external evidence of serious injury, however, not infrequently bloody fluid can be found escaping from the mouth and nose. Surviving victims in addition develop hemoptysis, pleurisy and cardiopulmonary collapse. Shock waves produced by explosions are transmitted with such force to the body as to produce hemorrhagic lesions in the viscera especially the lungs. On section the lungs may show confluent areas of hemorrhage. Treatment is essentially symptomatic with emphasis on bed rest, oxygen, etc.

Thoraco-abdominal Injuries. These are usually very serious, carry a high degree of mortality and demand the best in diagnostic acumen and treatment. In their management shock must be combatted but it should be remembered operation may be necessary when continued bleeding is in evidence even before all vital signs have stabilized. With open pneumothorax early operation is indicated with exploration of the abdomen through the diaphragm. Throacoabdominal incisions are useful to expose injuries to the chest and abdominal viscera. Rarely it may be necessary to explore the chest and abdomen through separate incisions. Drainage of the subdiaphragmatic area should be carried out in practically all combined wounds.

BIOLOGIC WARFARE

H. D. Ketcherside, M. D.
Phoenix, Arizona

EVER since man has known that microorganisms cause disease, there has been speculation and fear that they might be intentionally used to harm an enemy, and so far there has been no proven instance of their ever having been so used. However, since warfare has changed to total war, no estimate of an enemy's capabilities is complete without including the possibility of biologic warfare.

Natural limiting factors exclude a great many agents as suitable for such use. However, the following must be considered: viruses such as those causing influenza and psittacosis; Rickettsia such as those causing typhus and Q. fever; bacteria such as those causing typhoid and cholera, or those which cause tularemia and plague; fungi such as Histoplasma capsulatum and Actinomyces; and toxins such as that produced by Clostridium botulinum.

It is thought that to be most effective, these agents would be introduced through the air. This could be done by introducing them into the general atmosphere over a target area, or introducing them into the circulating systems of buildings. They might also be introduced into the water supply.

Defense against biologic warfare rests almost entirely upon those with professional and technical training, who are charged with peacetime health and medical activities, operating within the framework of Civil Defense organizations and under the director of Civil Defense health services.

Detection and control at the present time

would depend almost entirely upon the alertness of the physicians and health authorities in recognizing and isolating early cases. While the city water supply is examined daily, the examination consists of determining the presence or absence of Colon bacilli, and would be entirely inadequite for detecting biologic agents.

I feel that by far the greatest danger lies in the use of virus agents to infect cattle, hogs and poultry, since the only method of control is to isolate and destroy the entire herd. Few people realize how dependent we are on animal products for our very existence and how short the supply is at all times. This, however, is in the field of the veterinary surgeons, who are making a serious study of the problem.

CIVIL DEFENSE
EMERGENCY BLOOD TRANSFUSION

Prepared by the Tucson Blood Center and the Southwest Blood Banks from FCDA Technical Bulletin TB-11-5

THIS bulletin recommends minimal procedures for blood transfusion in civil defense emergencies. It describes procedures for the initial emergency or *O-P phase* when cross-matching will be impossible and only group O blood, plasma, or plasma volume expanders can be relied upon; the *transitional phase* when group-specific transfusions, employing emergency techniques, will begin; and the *recovery phase* when standard techniques for group-specific transfusions will be reestablished. These minimal procedures are not intended to be used when conditions permit the proper handling of blood. Improper handling of blood for transfusion leaves no margin of safety.

Ideal Conditions for Blood Transfusion

Blood transfusion is reasonably safe under ideal conditions. These include proper collection, processing, storage, distribution, crossmatching, and administration of blood. All phases in the handling of blood should be carried out under aseptic conditions, and approved techniques are required throughout. All donors should be medically screened to assure their safety and to exclude potentially infectious blood. All sera used in typing and serologic tests should be standard with regard to potency and specificity. Careful identification of donors, blood bottles, and recipients can only be accomplished through accurate labeling and recording. This is especially important during crossmatching.

O-P Phase

The initial emergency period following a major disaster is called the O-P phase to emphasize that only group O blood and plasma (or plasma volume expanders) can be relied upon during the first hours. Blood of group O can be administered without prior crossmatch to any person requiring emergency transfusion. This must be accepted and planned for, since facilities for grouping, Rh typing, and crossmatching may be lacking for 12 to 24 hours, or possibly longer. Even if certain nearby hospitals are relatively undamaged, available technicians will have more than they can do to meet the immediate demand for group O blood. *Grouping-specific transfusions must not be given on the basis of blood-typing records from identification cards, tags, or marks without careful crossmatching.* Therefore, plasma and group O blood are used until laboratory services can provide properly grouped, Rh-typed, and crossmatched blood for group-specific transfusions.

In the O-P phase, casualties requiring whole blood will be those exsanguinating injuries, especially those who need major surgery for resuscitation; these will be in the minority. *Group O blood must be given without regard to blood group or Rh type of the recipient in the initial emergency period.*

If group O, Rh negative blood is available without facilities for Rh typing of recipients, it should be reserved for those with exsanguinating injuries in the following priority:

(a) Young women and female children.

(b) Women who have had children.

(c) Persons who have had multiple blood transfusions.

If group O, Rh negative blood is available, and Rh typing of recipients can be done, Rh negative blood should be given to Rh negative patients. This will prevent Rh sensitization.

If low-titered group O blood is available, it should be given preferentially to persons who will require many transfusions, since large amounts of high-titered group O blood may cause destruction of the recipient's own red cells. (If available, A and B blood group sub-

stances should be added to group O blood with undetermined titer.)

Only group O blood can be given to group O recipients, since bloods of other groups are not compatible. High-titered group O blood, when so identified, should be given preferentially to group O recipients.

Plasma and plasma volume expanders are indicated in emergency treatment of shock due to hemorrhage, trauma, burns, and similar conditions, when whole blood is either not available or available only in limited amounts. Under such circumstances whole blood should be preserved for those cases where hemorrhage has been profound and resuscitation can be accomplished only by replacement of red blood cells. In all cases of shock due to severe hemorrhage or burns, plasma and plasma volume expanders should be given only in amounts necessary to meet the acute emergency of shock, and whole-blood therapy should be instituted as soon as possible to correct the complicating anemia. The majority of the injured will probably not suffer severe blood loss and therefore will not require immediate or subsequent whole blood transfusion. Plasma and plasma volume expanders have the advantage of immediate use without prior grouping or crossmatching and will not cause Rh sensitization.

Transitional Phase

A transitional phase in transfusion operations will follow the O-P phase, beginning perhaps in 12 to 24 hours, and possibly continuing for 48 hours. Some group O blood will still be used, but the use of group-specific transfusions, employing emergency procedures, will begin during this phase.

Recovery Phase

As soon as possible, standard accepted techniques for group-specific transfusion should be reestablished using the slide-test methods for ABO Blood grouping, Rh typing, and crossmatching. The test-tube cross-match technique should always supplant the slide technique as soon as facilities permit.

Group-Specific Transfusions

Only blood of group O can be given without crossmatch, and this is strictly an emergency procedure. Transfusions of unmatched group O blood should be abandoned as soon as conditions permit to conserve it for group O recipients. Donor blood of the other groups must always be cross-matched with blood from the recipient before administration.

Donor blood of the recipient's blood group should be selected and the two should be carefully crossmatched with a technique which will reveal both blood group and Rh incompatibilities. Although Rh negative blood can be given safely to Rh positive persons, the supply will be limited and should be reserved for Rh negative patients.

During the transitional phase, and when limited blood grouping and matching facilities are becoming available, it may be desirable as a first step to expand collection of blood to include group A in addition to group O donors. Group O blood can then be crossmatched for group O and group B recipients, and group A blood for group A and AB recipients. It is important that the major side of the crossmatch (donor cells and recipient serum) be double-checked for compatibility when cells of different groups are matched.

Processing Blood Outside a Disaster Area

All facilities surrounding a distaster area should be alerted immediately following an attack. They should collect and process all group O blood available from the population, indicating Rh positive or negative. Blood which is not group O may also be collected, processed and stored for use in the recovery phase or for conversion to plasma or its derivatives (groups A and B are ideal for plasma processing).

Emergency Processing of Blood In or Near a Disaster Area

During an emergency it may be necessary, in and near the disaster area, to compromise the accepted methods for processing blood under ideal conditions.

Selection of Donors

Usual standards for selection of donors may have to be lowered temporarily as follows:

(a) History of past disease (syphilis, malaria, or viral hepatitis) in a donor may be temporarily ignored except in cases where the disease, even though mild, is still active.

(b) Usual age and minimum-weight limits in donors may be extended to include all apparently healthy persons willing to give blood. The minimum hemoglobin standard of 12.5 gm. should be observed, if possible.

(c) Usual medical restrictions concerning such chronic disease states as hypertension and diabetes may be relaxed if the removal of 1 pint of blood is not medically contraindicated to the

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donor. The usual donor release form should be obtained, if possible.

Determination of Donor's Blood Group

It will be necessary to select group O donors for immediate use. This must be done with skill, employing known potent reagents, and with accurate identification of the donor with the speciment of blood tested. A record card must be kept showing the donor's name, address, and results of examinations made prior to bleeding. At the same time the hemoglobin test is done, blood should also be taken from the donor's finger to peform a blood-grouping test, preferably on the donor card, as a permanent record of the blood group.

The grouping test is performed on the surface of the card (or slide) by mixing a drop of antiserum with a small drop of blood, one-quarter the volume of the serum. Anti-A serum is placed in one space marked "anti-A", and anti-B serum in a separate space marked "anti-B". A small drop of blood from the donor's finger is mixed with the anti-A serum and spread out over an about 1 inch in diameter. (The finger must not touch the serum on the card.) Another drop of blood is mixed with the anti-B serum and spread similarly. The card should then be rocked back and forth and observed for agglutination.

If neither of the serum-blood mixtures shows agglutination, the person is blood group O. If both serum-blood mixtures are agglutinated, he is group AB. If only the anti-A serum mixed with blood produces agglutination, the donor is group A, and if only the anti-B serum-blood mixture is agglutinated, he is group B. (A third space may be provided on the card for Rh typing when done as a predonation procedure, or this may be done a slide with finger blood.)

Group O donors can be selected quickly. Each donor's card, after drying, supplies a permanent record not subject to clerical error or misidentification, provided the donor's name is checked at the time his blood is mixed on the card, and again when blood is drawn. In addition, while the needle is still in the donor's vein during the withdrawal of blood, a sample must be collected into a sterile pilot tube without anticoagulant. The tube should be firmly attached to the bottle of blood and used in the laboratory for proving the donor's blood group and for Rh typing.

The slide-test method will make it possible to rapidly select group O donors when the record card, described above, is not available. In addition, this method will reveal specific blood groups as well as Rh types with the least time and effort during the transitional and recovery phases.

To prepare group O blood for emergency use without crossmatching, the blood grouping must be proved by a second procedure. This is most easily done by using anti-A plus anti-B (group O) serum.

Identification of Donor Blood

The label on donor blood must show an identifying name or number, name and address of the establishment collecting blood, expiration date, and the blood group and Rh type of blood contained in the bottle. If the manufacturer's label is the only one available, the above information must be clearly written on it in pencil or waterproof ink. (Indelible pencil should not be used because under refrigeration the pencil markings will smear and become illegible.)

Crossmatching In or Near a Disaster Area

Advantage should be taken of techniques which will disclose dangerous blocking antibodies as well as the usual agglutinating antibodies. This is particularly true of recipients who may be immunized to Rh antibodies, such as women who have had children and persons who have had previous transfusions. In performing crossmatching tests, both donor and recipient sera should be inactivated by heating for 10 to 15 minutes in a water bath at 55°-56° C. If not done, hemolysis may occur, producing a false negative report.

Both sides of the crossmatch should be set up as routine, since this takes little longer than setting up only the major side. Incompatibility on the major side indicates that the blood must not be given, since a very serious or possibly fatal reaction would result. Minor side incompatibilities, although indicating failure of complete group and type matching, do not usually cause serious reactions and may be ignored in extreme emergencies.

Administration of Blood

A sterile pyrogen-free administration set with 70 to 100 mesh in-line filter should be used. The blood must be thoroughly mixed to produce a uniform suspension. Refrigerated blood should not be warmed prior to or during administration, or allowed to stand at room temperature longer than 1 hour before use. Heat may injure the red cells and produce excessive hemolysis when

transfused. The rapid administration of cold blood should produce no adverse effect.

Mixing blood with medications or solutions which are likely to produce hemolysis or cause a precipitation of plasma proteins should be avoided. Mixing within the tubing of the administration set with other than istonic solutions is likely to produce hemolysis. Medications should not be injected into the tubing carrying blood. Administration sets should be rinsed with physiological saline if they have been used to give other solutions prior to the administration of blood. Similarly, after a transfusion of blood, the filter and tubing should be cleaned by running 50 to 100 cc. of saline thru them before other fluids are given. If saline is not available, or is contraindicated, 5 percent dextrose in water should be used.

One of the most frequent and dangerous errors in cross-matched group-specific transfusions is the administration of blood to the wrong recipient. This must be prevented by careful identification of recipients, making certain that each gets the blood crossmatched for him. Special precautions are required for persons with common names. The emergency medical tag giving full identity expedites this.

Complications of Blood Transfusions

Hemolytic Reactions

Clinically, these potentially fatal reactions to whole blood transfusion are characterized by severe lumbar pain, sense of substernal oppression, violent chills, fever, and often rapid, labored breathing, prostration, and hypotension. The severity and time of onset vary; symptoms usually appear after 50 cc. or more of blood have been given. In Rh reactions the onset may be delayed for 1 to 2 hours after the start of the transfusion. Jaundice and renal insufficiency may occur later. The mortality rate of hemolytic reactions is relatively high in patients who develop renal failure with anuria. However, those who recover usually have no residual kidney damage.

The pathogenesis of the transfusion reaction stems from the antigen-antibody reaction which occurs with the transfusion of incompatible red cells, resulting in excessive hemolysis in the recipient.

Reactions having severest consequence are due to transfusion of ABO or Rh incompatible blood. Hemolytic reactions of lesser significance may also be due to the administration of compatible blood which has been improperly stored: e.g., poor refrigeration.

Reactions may also result from improper administration of blood. This may occur with excessive heating or the improper mixing of solutions with the blood.

Reactions to Rh incompatible blood depend upon acquired isosensitivity and occur most frequently in Rh negative persons. Sensitization develops during pregnancy in about 5 percent of Rh negative women bearing Rh positive children and occurs after repeated transfusions in about 5 to 30 percent of Rh negative recipients. In general, at least 1 to 3 Rh incompatible transfusions are necessary before significant sensitivity develops. Antibodies appear in 1 to 2 weeks.

The incidence of hemolytic reactions is not accurately known, but they occur chiefly because of human error.

Treatment of hemolytic reaction consists of the following:

(a) Stop transfusion at the earliest symptom.

(b) Treat shock, if present, by the usual methods for supporting the circulation with plasma, plasma volume expanders, or known compatible blood if available. (Recheck typing and crossmatch to locate and rectify error.)

(c) Give small amounts of barbiturates to allay anxiety, or morphine if the pain is severe.

(d) Administer sufficient amounts of appropriate fluids parenterally to maintain adequate urine output and proper hydration. Fluid and electrolyte therapy is of great importance, especially if renal failure with anuria or oliguria develops.

During the acute phase of the reaction only a few casualties will be able to take fluid by mouth. The insensible loss will approximate 1,000 cc. per 24 hours. This water loss plus all measurable fluid losses should be conscientiously replaced each day. During the period of oliguria or anuria, little or no sodium will be excreted in the urine; therefore, salt intake should be carefully restricted. However, if the transfusion reaction occurs in an already dehydrated and salt-depleted patient, the judicious administration of salt and water may in itself be necessary for the maximum function of the injured kidney. Once these needs have been met, careful daily replacement of water (dextrose in water) is essential together with repeated reevaluation of the electrolyte balance of the patient.

Alkalinization of the urine should not be attempted, since the relatively large amount of sodium administered as lactate may be retained and may precipitate pulmonary edema. An alkaline solution should be used cautiously only during later stages of renal shutdown, to correct acid-base imbalance.

As long as renal insufficiency persists, there is a danger of death from pulmonary edema with the excessive administration of saline. The great majority of patients who experience transfusion reactions will survive with good renal excretory function. Despite severe oliguria, conservative treatment in most cases will be rewarded by recovery within 2 to 3 weeks. It is recommended that 100 to 200 gm. of carbohydrate per day be given the patient. This is a basic metabolic requirement and will tend to spare protein stores of the body.

Careful typing and crossmatching of both donor and recipient and accurate recordings of these data for proper identification of each bottle of blood during handling, processing and administration is obviously required for prevention of hemolytic reaction. Proper hydration of the patient being transfused is of great clinical importance. The patient who experiences a transfusion reaction and who has had adequate fluids and a good urine flow will probably suffer less severe renal damage and make a more prompt clinical improvement than the patient who is dehydrated and salt-depleted when transfused.

Circulatory Overload

Clinically, circulatory overload can be a serious complication and is characterized by pulmonary congestion and edema. The onset of symptoms may occur during or shortly after transfusion with sudden dyspnea, orthopnea, cyanosis, cough, and physical signs of pulmonary edema. These are the symptoms and signs which accompany an excessive increase in blood volume due to transfusion of any solution at too rapid a rate or in too great an amount. Older people and those with heart disease are especially susceptible, and caution should be exercised with these persons.

Treatment should be prompt and the transfusion stopped with the onset of symptoms and signs of circulatory embarrassment. Oxygen should be administered if available. Tourniquets applied to all four extremities (to stop venous but not arterial flow) will give relief in a large number of patients. In some cases phlebotomy will be necessary.

Prevention of overloading the circulation is contingent on the medical evaluation of each clinical situation. The rate of infusion should not exceed 5cc per minute at the start of the transfusion, except in the presence of shock.

Pyrogenic Reactions

Clinically, pyrogenic reactions are the most common. They are characterized by chills and fever occurring during or within 1 hour after transfusion and usually lasting less than 4 hours. They may be mild or very severe with violent chills and fever of 104 or 105° F. Recovery is generally complete within 24 hours. If there is difficulty in distinguishing between a pyrogenic and a hemolytic reaction, the finding of an abnormally high amount of bilirubin in the serum will be conclusive evidence of a hemolytic reaction.

Treatment is symptomatic along with prompt discontinuance of the transfusion if the reaction is severe.

Contaminated Blood

Grossly contaminated blood must not be given under any circumstances. If inadvertently given, the patient will show symptoms and signs of being severely and acutely ill with a bacteremia. Treatment should be prompt, with large doses of available antibiotics, adequate treatment to combat shock if present, and the necessary symptomatic care.

If possible, the bottle of blood should be returned to the laboratory for culturing and identification of the specific organism so the patient can be treated with appropriate antibiotics.

Allergic Reactions

Clinically, an allergic reaction is common and usually characterized by urticaria and occasionally by angioneurotic edema, severe or giant urticaria, and asthma. The urticaria, generally localized, appears during or soon after transfusion. Patients with severe reactions develop asthma or angioneurotic edema, the most dangerous variety involving the glottis. Duration rarely exceeds a few hours.

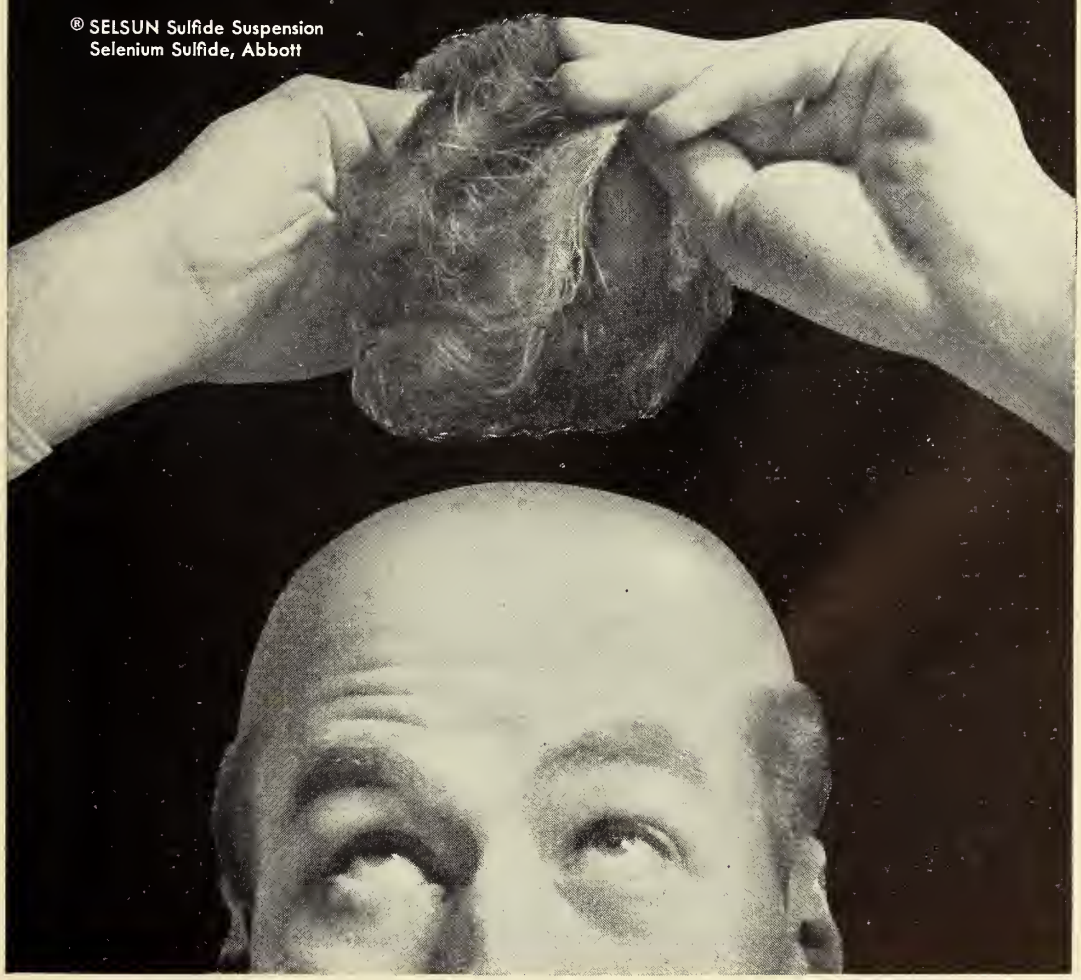
Treatment is entirely symptomatic. In mild cases 0.3 to 0.5 cc. of 1:1,000 solution of epinephrine can be given subcutaneously. This dose may be repeated at intervals of 20 minutes to 1 hour. In severe cases 0.5 cc. intramuscularly or 0.3 cc. intravenously may be needed. Antihistaminic drugs may be helpful. Usually the transfusion can be continued in the milder urticarial reactions, but if asthma or angioneurotic

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edema appears it should be stopped immediately.

Transmission of Disease

The practice of accepting as donors only those who state they are in good health, and who, on examination show no apparent evidence of active illness, eliminates most of the disease transmission hazard in blood transfusions. There are, however, three known instances in which these criteria are not adequate:

(a) Syphilis, during the spirochetemic stage, especially before the serology has become positive or the chancre noted, may be accidentally transmitted to a recipient. Penicillin therapy should of course be given if this occurs. Prevention is partially accomplished by careful screen- of donors and may be assured by refrigeration of blood collections for at least 72 hours before use since the spirochete survives less than 72 hours in blood stored at 0 to 10° C.

(b) Malaria is transmissible by blood transfusion. Plasmodia may appear in the bloodstream years after an attack of the disease without producing symptoms. In addition, plasmodia may not be detectable by blood-smear examination because of their insufficient number. Therapy with chloroquine, kuinacrine, or quinine will cure malaria transmitted by transfusion. Prevention of malaria in recipients lies entirely in the rejection of donors with a history of malaria or those who have had intensive suppressive therapy without clinical manifestations. The malaria parasite survives in stored blood as long as the red cells, and is not destroyed by refrigeration.

(c) Hepatitis can be transmitted by blood or plasma from donors who are asymptomatic carriers or are in the prodremal stage of the disease. The viruses of both infectious hepatitis and of homologous serum hepatitis are transmissible by transfusion. Incubation periods vary from 1 to 6 months. At present, prevention can only be partially effective by rejecting donors with jaundice or known liver disease, or a history of either type of viral hepatitis, and donors who, within a 6-month period, have had blood or plasma transfusions, or have been intimately exposed to a case of infectious hepatitis.

Tetany

The sodium citrate used as anticoagulant may rarely produce tetany following rapid transfusion of large amounts of blood and plasma, especially to infants. Therapy consists of intravenous injection of calcium gluconate to restore a normal concentration of free calcium ions in the circulation.

Air Embolism

Air embolism sufficient to cause fatality is rare. It is most likely to occur when blood is administered with pressure apparatus rather than by gravity. When blood is administered under pressure, a responsible attendant must be present constantly.

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U. S. Government and Federal Civil Defense Administration Publications; Available at the Supt. of Documents, Washington 25 D.C., at the indicated price:

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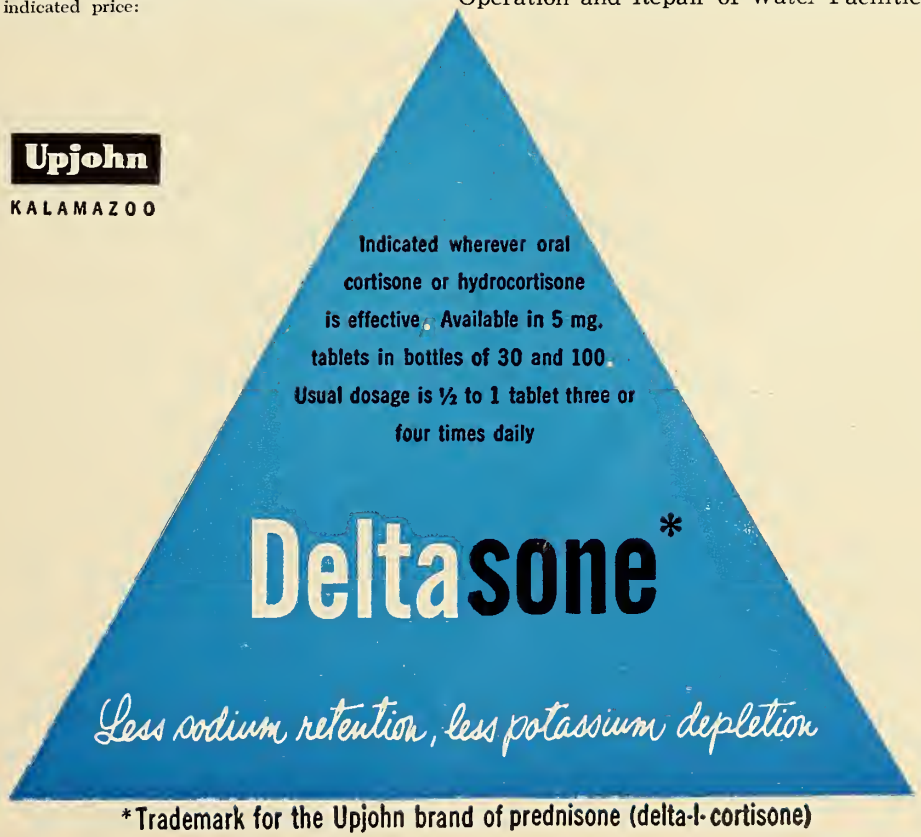
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Effects of Atomic Weapons (Dept. Defense and U.S. Atomic Energy Comm.) 1.25

Publications Available Free of Charge at the State Civil Defense Office: 2019-B, N. 7th St., Phoenix, Ariz. Phone AL 8-6697.

Radioactive Fallout from Nuclear Explosions (AB No. 178) Nov. 8, 1954.

Residual Radiation in Relation to Civil Defense (AB No. 170) Feb. 9, 1955.

Operational Readiness to Provide Whole Blood in Emergency (AB No. 1845), Mar. 10, 1955.

Psychological First Aid in Community Disasters.

Training for First Aid Personnel, March, 1953.

Emergency Sanitation for Neighborhoods, (No. 16, April, 1953).

Emergency Care Where You Need Ia (Improvised Hospital).

Facts About the H-Bomb.

(Many other publications are available at this office including some of the FCDA bulletins listed above. Your inquiry is invited.)

Other Publications

Treatment of Chemical Warfare Casualties TM-8-285, NavMed. P-1330, AFM 160-12.

Departments of Army, Navy and Air Force:

Handbook of Atomic Weapons for Medical Officers No. 8-11, NavMed P-1330, AFM 160-11.

National Blood Program, Publicity Manual — Prepared by Office Defense Mobilization.

Agriculture Handbook No. 56, Section on Emergency Food Planning U. S. Dept. Agr.

The Dairy Industry in Civil Defense (Milk Industry Foundation, Wash., D.C.)

Emergency Medical Care Diabetics (American Diabetes Assoc. 11 W. 42 St., N.Y. 18, N.Y.)

Nursing in Disaster (League of Nursing Education).

Disaster Blueprint for the Industrial Physician — AMA Council on Industrial Health.

Medical Aspects of Civil Defense (Reprinted series articles on J.A.M.A. on civil defense).

Rodent Control in Epidemics and Disaster U.S. Pub. Health Communicable Disease Center, Atlanta, Georgia, (also bulletins on fly and mosquito control available here).

Sanitary Engineering Problems in Disaster — McCallum, Chief Health Emergency Planning, U. S. Pub. Health Service, Dept. Health, Education, and Welfare, Washington 25, D.C.

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THE President's PAGE

HEALTH LEGISLATION

In the following table you will find an up-to-date compilation of the status of the more important health bills in this session of the 84th Congress. Bills on which there has been no significant action are ilsted at the bottom of the table. The number in parentheses after the bill number refers to this year's AMA WASHINGTON LETTER in which the bill was analyzed. When developments warrant, a revised table will be printed.

SUBJECT	BILL NO.	HOUSE	SENATE
Dr. Draft Extension*	H. R. 3005 (26)	Public Law 118, 84th Congress	
$100 Extra Pay*	H. R. 3005 (26)	Public Law 118, 84th Congress	
Disability Payments	H. R. 7225 (28)	Passed 7/18	Hearings Held
Jenkins-Keogh**	H. R. 9, 10 (3)	Reported	
Salk Vaccine Grants	S. 2501 (29) H. R. 6286 (21)	Hearings Held	Passed 7/18
Amend Biol. Law	H. R. 6207(22)	Hearings Held	
Mental Health Survey	H. J. Res. 256 (13)	Passed 4/21	Passed 7/18
Mental Health Grants	H R. 3458 (7) S. 886 (7)	Hearings Held	Hearings Held
Medical Educ. Aid	H. R. 4743 (11) S. 1323 (11)	Hearings Held	Hearings Held
Lab Research Grants	H. R. 3459 (7) S. 849		Passed 7/18
Narcotics Survey	S. Res. 67 (11)		Passed 3/18
Practical Nursing	S. 866 (7) S. 929 (9)		Hearings Held
Water & Air Pollution Grants	S. 890 (11) S. 928 (8)	Hearings Held Public Law 159, 84th Congress	Passed 6/17
Bricker Amendment	S. J. Res. 1 (3)		Hearings Held

No Progress On Following: Health reinsurance (H. R. 3458, S. 886), mortgage loan guarantees (H. R. 3458, S. 886), military medical scholarships (H. R. 4645, S. 1444), dependent medical care (H. R. 2685, S. 934), PHS grants revision (H. R. 3458, S. 886), mothers' and crippled children's grants (H. R. 3292), Medical care for the indigent (H. R. 3293, S. 1198), raising U. S. contribution to WHO (H. J. Res. 293), illness inventory (H R. 4098), omnibus narcotics control (H. J. Res. 141, S. J. Res. 19).

*The House bill to extend the doctor draft (H. R. 6057) was left to die in the Rules Committee when the Senate added the doctor draft extension to the bill extending the regular draft (H. R. 3005). The combined bill then was enacted. **This made part of an omnibus tax revision bill before being reported out.

Harry E. Thompson, M.D.
President, Arizona Medical Association

"THE HISTORY OF THE PROFESSIONAL BUILDING, PHOENIX, ARIZONA

This column will contain from time to time different episodes in the history of medicine in Arizona as reflected in the stories of it's hospitals, medical buildings, medical societies, pioneer doctors, etc. It is sponsored by the Committee on Medical History of the Arizona Medical Association. Any contribntions to this subject are always welcome. — ED.



THE story of the building of the Professional Building is a fascinating tale compounded of circumstances, growth of Phoenix, conditions of medical practice, and in particular, the history of one man, Roy Wayland. His early experience in Arizona, his knowledge of the growth of the community, his popularity with the doctors, and finally his freedom to develop this gigantic development at a time when the deepest depression the country had ever known was in full swing, were fortuitious conditions of this building's existence.

Coming to Phoenix in 1901, Wayland first went to work as a druggist for the Bear Drug Company. During that early period to 1903 he also served as a clerk in the Territorial Legislature. Then for nine years, he worked in and operated a company drug store at Clifton dispensing under the medical director, Dr. Harry Horn. During this same period Dr. A. M. Tuthill was physician for another company in the area. About 1912 Wayland returned to Phoenix and purchased the Lovett Drug Company and stayed in this location at Washington and Central, till selling to the Walgreen chain in 1929. At the time he acquired this drug store the annual gross was about $25,000 and in 1928 it was over $500,000. The corner was at the cross roads of the state during that period, and the owner was necessarily in on much of the civic development and growth of Phoenix.

Soon after Wayland came back to Phoenix, Roy Goodrich wished to raise his Goodrich Building from four to six stories, started the project and had to have help in finishing it, which gave Wayland a chance to do a good turn for Goodrich and the doctors and dentists at the same time. His popularity with the profession was also based on cooperative business principles, and he employed first class druggists for the prescription department, which had no peers during that time. The Goodrich Building was the principal medical center, with such men as Win Wylie, E. Payne Palmer, Geo. Goodrich, Fred Holmes, Alex Tuthill, Ansel Martin, and W. W. Watkins, William A. Schwartz, Harry Gudgel, Delamar Harbridge officing there.

All during the twenties, the Goodrich Building became less and less adequate, and with Phoenix doubling in population, medical office space was hard to find. In 1929, Wayland went into an agreement with Schram Johnson of Salt Lake City, and others to form a drug chain in five mountain states and west Texas. The Walgreen Drug of Chicago was looking for western connections, and persuaded the group to sell out to them. Arrangements were completed before October for Walgreen to take over Waylands store on January 1, 1930, with the only stipulation that he would not start a store within two blocks of the original site. This arrangement was concluded before Wayland had any notion of starting another medical building project. So he found himself in possession of $90,000 cash plus something for good will, at a time when cash was hard to come by. Liquid assets were rapidly disappearing all over the United States after November, 1929.

Now let us turn for a moment to the general situation of medical practice in the twenties. Phoenix had prospered, and the town was not over supplied with doctors. Most medics were

HBA FOR SECURITY

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by Hospital Benefit Assurance, First Street at Willetta, Phoenix August, 1955

TIMELY SUGGESTIONS FOR SURGEONS

HBA is vitally interested in the surgeon's operations — those he performs as well as the business end of his operations — and we ever strive to be as helpful as possible. We do try to cut the corners in our business operations to save you time and trouble. These few suggestions will give you a quick newsflash summary of HBA's operations in relation to your own.

No Red Tape

It is the aim of HBA to so handle payments of surgical and hospital bills that all concerned will be spared of any trouble.

The fact that around 96% of the hospital admissions are handled and paid without claim forms bespeaks the advantages of HBA's time-saving, trouble-saving activities.

The key to this overall convenience is the HBA Membership Card. On being admitted, the Member simply turns his card over to the hospital. If the patient has surgical protection and an operation is indicated, the surgical bill form is furnished for the surgeon so that we can determine the amount payable in accordance with the surgical procedure.

This expediency obtains in all but very few cases. For example, in the case of a new policy HBA may require additional information to determine whether the patient is eligible for payment. We do not pay for conditions which existed prior to the patient's membership in HBA.

Further, in connection with sub-standard risk, more detailed information is necessary to determine eligibility, since protection may be limited because of such risks.

All told, the HBA convenience-for-all "system" has been highly lauded. And HBA is proud of the fact that we can hold the number of cases down to approximately 4% on which we ask the patient or the attending physician to fill out claim forms.

Whenever we can minimize detail, and thus conserve the surgeon's time, we always do so.

HBA Doesn't Set Fees

While HBA has a schedule of fees for surgical operations, anesthetist fees, X-rays for emergency accident treatment, etc., there is no attempt on the part of HBA to convey to the patient that this schedule of fees is absolute.

"Amounts in excess of that payable according to our schedule of surgical benefits should be billed to the patient" is the clear statement on our surgical bill form which the patient presents to you for submitting your charge to HBA.

Many surgeons do charge the exact amount allowed by HBA. They have concluded that the fees will average out all right. Some operations are more difficult, of course. But on the easier ones, they also receive the full fee. Doctors in the South often charge smaller fees than those in the HBA schedule. However, this matter of fees is strictly between the physician and his patient. No attempt is made by HBA to interfere with this relationship.



"He's out back teaching Junior about the birds and the bees."

Sub-Standard Risks

Hospitalization and surgical insurance written on a non-group basis actuarially requires that such risk be a standard risk. That means the insured must be in ordinary good health.

This is not necessary in the group category, because the law of averages will take up the slack, so to speak. Though there are one or two poor-health persons in the group, a like number who are in excellent health, and others in between — the average may be considered "standard risk".

But in writing a non-group policy it would be disasterous for a company to accept only people in poor health. For, in time, the company would have nothing but poor risks. Then the rates would have to be raised so prohibitively high that those who are in ordinary good health could not afford coverage with that particular company.

HBA does make every effort to write as many sub-standard risks as possible. Sometimes this can be done in the form of an Endorsement which limits their coverage. For example, the person who has a hernia knows that he will need surgery some day. HBA will write that individual, but with a written understanding that payment cannot be expected from HBA for that particular operation.

Sub-standard business, especially that which is quite sub-standard, is not particularly desired by HBA, but is written more or less as an accommodation to the person desiring HBA general protection. It is mostly when other members of the family, who are standard risks, desire protection that we include sub-standard risks.

as busy as they wanted to be. There was no county hospital or medical service outside of a county physician and volunteer services in the general hospitals for which the county paid hospitals $3.00 per patient a day.

Aside from a short sharp shock of depression in the early part of the decade, Phoenix was in one of its boom periods. Cotton was king in the valley, much as it has been in the past six years. It was natural, therefore, that plans for new medical buildings were blooming. One of the most interesting was that of Coit Hughes and Hattie Mosher. Dr. Hughes was county physician, and a power politically, although a bit short on capital. Hattie Mosher had money when she came to Phoenix at the beginning of the century, a scion of the Denver Post owner, but her dreams in Phoenix had ended largely in disappointment; two structures on Central Avenue were started then boarded up and under constant court action for the collection of taxes and indebtedness against the old lady. As she wandered about town from court room where she was her own lawyer in countless suits, to her unfinished framework of a building on Central north of the Van Buren corner she was a picturesque figure, in an old black lace gown, and hats thirty years out of style. Now she wanted to start a medical center building.

This plan never got to first base because of lack of confidence in the parties of the planning. There were other propositions. Dr. Robert Craig drew up a plan and invited the Pathological Laboratory and other key figures from the Goodrich Building group to join in financing and constructing a building which would have been at the McDougall and Cassou location. When it was found that Dr. Craig was not able to put up the principle sum for completing the structure, the docotrs withdrew their support, and it was abandoned. Mr. Johnson from Denver was controller manager of the Westward Ho at the time (1929), and he offered financial support to a project to be built on the NE corner of Van Buren and First Avenue. Boarding off of the corner for construction made it seem that

METICORTEN
PREDNISONE
Schering
SCHERING
in rheumatoid arthritis
more potent
than other corticosteroids
lessened incidence
of sodium retention
and potassium depletion
*T.M.
METICORTEN,* brand of prednisone.

the project was well on its way, but Johnson had a heart attack and the stock market crash finished any hope for completion of the preliminary arrangements.

A group of promoters came over from California, and went into huddles with many of the local doctors and dentists. Their propositions seemed to involve the paying of fees and commissions for practically everything in the promotion line, and the final meeting broke up with nothing settled. During the course of these discussions Roy Wayland who was in on them, became disgusted with the plans, and said to one of the doctors, "well, if you get a building, all right; but if you don't, I'll build you a building." Before long they came back to him, called his statement and he had to make good on it. He was invited to attend a meeting of the Maricopa County Medical Society, early in 1930. John McLoone was president and Victor Randolph was secretary. The needs of the members received an airing, and the upshot of the meeting was that if it was their desire to go ahead with a building, and if their co-operation would be forthcoming, Wayland would proceed with the preliminary plans and see if financing could be obtained.

The Valley Bank and Trust Company was then occupying the space on West Adams next to what is now the Flame Restaurant, then the Grand. The bank's lease on the property expired in March, 1930, and the option to renew contained in it that the lease was to provide an option to renew for five years at $1250.00 per month and an additional five years at $1500.00 per month. Continued occupancy of the space would have necessitated considerable expense for remodeling. The bank owned the property at the corner on which the Professional Building now stands, having acquired it in 1907, at a cost of approximately $63,000.00. In 1929, a definite offer of $330,000.00 had been submitted to the officials of the bank and refused by them. While land values took a dip in the 1930's, comparable business property in the 1950's is valued at higher rates.

Shortly after the medical meeting on February 21, 1930, Wayland submitted a prospectus of a new building to be erected on that site to the Board of Directors of the Valley Bank. Previously, the Bank had been considering a one or two story construction of banking facilities only. At a meeting in April he was asked to submit plans for a larger structure to house the medical and dental profession, and was appointed chairman of a building committee to study and further the possibility of constructing a building. Thus, early in March, 1930, Wayland began an intensive round of discussions and conferences with doctors and dentists, architects, and bank people. Tentative leasing of space was begun. For each of the upper six floors of the proposed building, one or two key men were chosen who helped in securing commitments of other medical men and of dentists with the amount of square footage desired. As the plans took shape these agreements were drawn into contracts and leases by Mr. Gust whose law firm was to be the only legal group to occupy the building.

Architects Morgan, Walls, and Clements of Los Angeles were retained with local architect H. H. Green, who was to occupy the second floor of the building for many years, as associate. The Valley Bank leased space for itself and accepted common stock in payment for the lots on which the building was to stand.

By June 16, 1930, the architect submitted first plans and estimates. The Building Planning Service of the National Association of Building Owners and Managers was brought to Phoenix, comprising men from all sections of the United States. The minutes of the meetings of the planning group represented a bound volume of 213 pages. The medical group supplied the name THE PROFESSIONAL BUILDING.

The success of the entire project rested upon the extent to which Wayland was able to satisfy the varying wishes of the medical and dental professions. He made many of the arrangements personally, spent hours going over details with prospective tenants, brought groups of professional men who might have been unable to get together by themselves into the project. No commissions were charged on loans, no commissions went to anyone on rentals of space, no salary was drawn for services until the building was occupied. Tenants were not required to pay cash for partitions and in most instances, they signed notes which were paid out as rent. Although the contracts called for an increase in rent at the end of two years from the original rate of $2.50 per square foot per year, the building gave tenants relief because of the prolonged depression and rents were stationary until 1943.

The building further kept up space on the twelfth floor where the Maricopa County Library was housed. Dr. W. W. Watkins had, with Dr. O. H. Brown kept the nucleus of a

library for years prior to 1932 and served on the Library Board as well as the writer, although we had no money from the County Society to pay a librarian until about 1939.

By January 1931 the plans were completed. A substantial part of the financing had been underwritten by the Security First National Bank of Los Angeles and nearly half of the financing was by stock shares sold locally.

The L. E. Dixon Construction Company of Los Angeles who had built the Security Building, and the Phoenix Court House and the City Hall was awarded the contract and excavation began March 12, 1931. The contract provided a $30,000 fee to the contractor as overhead and profit and specified a maximum guaranteed cost to the owner. The Dixon Company completed the construction at a total cost materially less than the agreed price and all of this having reverted to the owners in spite of provision in the contract that the contractor should participate in any savings which might be effected.

Le G. Moore came with the Dixon Company as cost accountant and payroll supervisor and two years after the completion of the building, he came back to take over the building management.

Excavation for the basement and foundation footings extended down twenty-five feet at which level an old river bed was found. An Indian ax head was found in the gravel at this depth. Six inch pipes were required to carry water from the excavation to the street to permit pouring of concrete footings.

The framework of the building is structural steel. A one hundred ten foot boom was erected to handle the steel girders and beams; after the lower levels of frame were in place, the derrick was moved to the top, towering over two hundred feet above street level. The height of the building was 183 feet, 4 inches.

During construction, conferences with the doctors and dentists were being held to complete the plans, for their individual sites and 74% of the space was leased during the first year it was opened. The total amount of rentable floor area was 88,914 square feet. The lower floor space began to be occupied December 1, 1931. The bank moved February 21, 1932.

The following is a list of the Doctors and Dentists who moved into space in 1932 with the amount of rent space taken.

PHYSICIANS	Sq. ft. of space occupied
Pathological Laboratory	4717
Dr. Harland P. Mills	
Dr. Warner W. Watkins	
Dr. L. A. W. Burtch	341
Dr. David D. Davis	652
Dr. A. C. Kingsley (Ind. Comm.)	1364
Dr. E. Payne Palmer, Sr.	1649
Dr Frank Milloy	
Dr. Dudley Fournier	
Dr. John H. White	
Dr. William A. Schwartz	1333
Dr. B. L. Melton	
Dr. T. T. Clohessy	341
Dr. Harry J. Felch	511
Dr. S. D. Little	713
Dr. H. M. Purcell	682
Dr. Orville H. Brown	1819
Dr. Trevor Browne	
Dr. A. J. McIntyre	388
Dr. Henry L. Franklin	341
Dr. Louis B. Baldwin	511
Dr. James L. Johnson	512
Dr. L. H. Thayer	512
Dr. Willard Smith	682
Dr. D. F. Harbridge	652
DENTISTS	
Dr. John C. Austin	208
Dr. H. A. Berry	341
Dr. A. J. Jensen	
Dr. George H. Chiles	341
Dr. H. L. Henry	341
Dr. R. L. Dunlap	490
Dr. Franklin R. Smith	341
Dr. E. M. Pafford	512
Dr. Robert A. McCall	512
Dr. John I. McCall	
Dr. Edgar B. Pease	336
Dr. Claude M. Moore	490
Dr. L. O. Spillane	200
Dr. James L. Borah	901
Dr. Logan D. Dameron	341
Dr. Paul J. Ritchie	341
Dr. Lloyd C. Mason	396
Dr. R. Dean Creamer	286
Dr. Thos. W. Firth	341
Dr. H. J. Jessop	341
Dr John A. Lentz	341
Dr. H. H. Branton	341
Dr. William A. Baker	445
Dr. W. G. Barackman	512
PHYSICIANS	
Dr. A. M. Tuthill	748

Dr. Norman Ross	
Dr. Harry B. Gudgul	490
Dr. Harry R. Carson	511
Dr. Edgar Brown	341
Dr. Benjamin Herzberg	341
Dr. George E. Goodrich	2671
Dr. Vernon Kennedy	
Dr. Jesse D. Hamer	
Dr. Robert S. Flinn	
Dr. D. R. Gaskins	495
Dr. Fred G. Holmes	1333
Dr. Victor Randolph	
Dr. Howell Randolph	
Dr. George Shields	1023
Dr. Hillary Ketcherside	
Dr. Carlos Craig	310
Dr. J. J. McLoone	1478
Dr. O. W. Thoeny	
Dr. Thomas W. Woodman	581
Dr H. K. Beauchamp	316
Dr. T. E. McCall	264
Dr. James E. Dione	280
Dr. Edwin C. Bakes	646
Dr. Kimball Bannister	1050
Dr. Leslie R. Kober	
Dr. Louis Dysart	512
Dr. Palmer Dysart	
Dr. Fred C. Jordan	512
Dr. Forrest L. Reese	512
Dr. J. M. Greer	1137
Dr. S. I. Bloomhardt	512
Dr. E. A. Gatterdam	210
Dr. Harvey E. Moss	281
Dr. Charles B. Palmer	376

Howell Randolph, M. D., for the Committee on Medical History of the Arizona Medical Association.

CIVICS By Dr. Norman A. Ross, has been omitted from this issue due to the featuring of CIVIL DEFENSE material.

METICORTEN
PREDNISONE
Schering
SCHERING
in rheumatoid arthritis
more potent
than other corticosteroids
lessened incidence
of sodium retention
and potassium depletion
*T.M.
METICORTEN,* brand of prednisone.

Woman's AUXILIARY

ARIZONA



Mrs. Brick P. Storts
Tucson, Arizona

AS president of the Woman's Arizona Medical Auxiliary to the Association, I am proud to submit the following report for the year 1954-1955.

ORGANIZATION — There are 5 organized counties, with a total membership of 497 out of a possible 650. This is an increase of 56 members over the previous year. The greatest number of new members are in the 2 largest auxiliaries where a membership coffee or tea is given each fall. Great distances in Arizona make the organization of some counties impractical. Wives of physicians residing in such areas are urged to become members-at-large. They are sent personal letters concerning projects of the Auxiliary.

A newsletter is sent out 3 times a year to every doctor's wife in our state. The president and president-elect have visited the organized counties during the year. Much interest in auxiliary work is stimulated by this personal contact. Each group is most hospitable and enthusiastic. Four regular Board of Directors meetings are held each year.

PROGRAM — "Leadership in Community Health", the theme suggested by our National President, has served as the basis for the State Auxiliary program throughout the year.

Most groups had outside speakers (at regular meetings) to discuss Civil Defense, Legislation, Nurse Recruitment and Mental Health. These lay people were usually specialists in their field. Thus doctors' wives were able to learn how best to serve their community as health leaders. This is also an excellent liaison between the lay and medical groups. Most auxiliaries had a social hour during their meetings when husbands were occasionally invited. This type of sociability is most important in order "to cultivate friendly relations and promote mutual understanding among physicians' families." The School of Instruction for officers and committee chairman was again given during State Convention.

PUBLIC RELATIONS — Our State Chairman reminded us at the first Board Meeting that Public Relations offer a job for every doctor's wife. In Arizona, I am sure that this statement has been taken literally by each Auxiliary Society. One group, with 14 active and 15 associate members, sponsored a Charity Ball where over $4000 was raised for the local community hospital. They also netted $370 from a rummage sale. This same small auxiliary cooperated with their County Medical Society to sponsor a booth at the County Fair in commemoration of 50 years of medical service to the County. The booth merited the $100 first place award for the best community exhibit.

Audiometer tests were carried on in the public schools by 2 other groups. Another auxiliary sponsored a School Health Radio program for the fourth consecutive year. Our largest group again sponsored a money raising project to secure funds for their local child Guidance Clinic and the establishment of a community trust fund.

Probably our most important single honor was realized when Mrs. John Eiserbliss, State Chairman of Public Relations of the Arizona Medical Auxiliary was voted "Woman of the Year" by her community in Phoenix, a city of nearly half a million population.

NURSE RECRUITMENT — The progress of this program in Arizona has been most satisfying, not only in terms of number of students in our Arizona Schools of Nursing, because the 3 Diploma Schools are full, but because we have fed our schools with enough applications so that they have had a better selection and a better screening program, and many applicants have gone to schools of states nearby. This has been accomplished because the key people in our communities, such as counselors, teachers, ministers, newsmen, television and radio personnel,

have been educated to the fact that future nurses are not selected from students who cannot qualify for other professions; but must be of a high mental, moral and physical character. We have cooperated with the Arizona Nurses Association on state and local levels in carrying out this program. The Joint Committee on Careers in Nursing held a Statewide workshop in Phoenix in March. Mrs. Miller, field consultant for the Western Region of the National Committee on Careers in Nursing, was present and gave the summary of the meeting. She was most generous in her praise of the Auxiliary's part in the success of this program. She described our Nurse Recruitment Program as one of the most progressive in the entire country. Our program has been active in the High Schools over the State where we feel that the best source of material is developed in the Future Nurse Clubs. There are 11 active clubs. Nurse Recruitment Week, for the State of Arizona, was proclaimed by the Governor for February 13-20. During this time we placed posters in stores, libraries, post-offices and in buses. The radio and TV publicity was excellent. Editorials, news items and pictures appeared in the newspapers. Each of the three hospitals held open house with almost 600 high school students in attendance. A brochure is being compiled regarding available loans and scholarships for nurses. The interest and enthusiasm that has been manifest in all communities toward Nurse Recruitment has surpassed our highest expectations.

MENTAL HEALTH — Activity in Arizona toward mental health has made remarkable progress during the past year. New, existing and reorganized groups devoted to this problem have been aided greatly both by the County Auxiliaries and by individual members. The role of the County Auxiliary has been (1) educational; (2) financial. The individual auxiliary member has proved a valuable liaison between organized mental health groups and medicine. Because the physician's wife recognizes not only the need for funds for research in this field, but also the dangers of socialism, she is especially valuable as a member of the governing boards of these groups. The State Chairman of Mental Health for the Auxiliary is on the Board of the Arizona Association for Mental Health as are 2 other State Auxiliary Board members. Auxiliary members sit on county boards of both the Phoenix and Tucson Child Guidance Clinics, and were instrumental in the formation of



both of these organizations. A third clinic is being formed in Yavapai County where auxiliary members are active in spear-heading the group. As state president, I discussed "Juvenile Delinquency" on the Mental Health Panel at the Conference of State Presidents and Presidents-Elect held in Chicago in November.

CIVIL DEFENSSE — The state chairman has attended 2 meetings with Federal Region Directors where important aspects of C. D. were explained. County chairman have attended local F.C.D.A. meetings in order to become acquainted with the C. D. problems. Auxiliary members have worked as volunteers with the Red Cross Blood Donor Center and have taught classes in home nursing. In one county an auxiliary member aided the local physicians in setting up casualty clearing stations throughout her city. These are First aid stations which may be put into action after any disaster.

LEGISLATION — The State Chairman sent the names of all County Legislative Chairmen to Central Office to be placed on the A.M.A. Washington Letter mailing list. Early in September she sent personal letters to each county chairman asking that new auxiliary members be contacted and urged to register before the September 27 deadline. She also suggested that an exchange of ideas and problems might be helpful in carrying on legislative programs, and expressed her eagerness to help whenever possible. Material from the National Chairman was sent out in October. In the same envelope copies of the candidate questionnaires, of both U. S. Representatives to be elected, were enclosed together with suggestions on how to go about using this material. Three county auxiliaries devoted an entire meeting to legislation. The members were divided into small groups with leaders to carry on discussion and questions. This idea proved successful in encouraging individual participation.

Another county became so interested in a study of the constitution that 23 of the member-

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ship ordered the book "Your Ruggest Constitution."

Surely a fine start has been made toward cooperation between the State Legislative Chairman and the County Legislative Chairman. In summarizing her year's work the State Chairman says: "It is hoped that the County Auxiliaries will have more enthusiatstic, dedicated members who will "take-on" one of the most important and challenging phases of auxiliary work."

STUDENT NURSE LOAN FUND — Seven students received loans in 1954 with the total amount disbursed being $2,050.00. Twenty-two girls have utilized our funds since the inception of the Student Nurse Loan Fund five years ago. The amount of money in circulation at the present time is $5,650.00. In February, a letter was sent to the principals and vocational directors of all high schools in the State as a reminder of the closing date in accepting applications for 1955. A large number of students have requested application forms and 3 are completed. This interest is probably a direct result of Nurse Recruitment Week, plus the work of our Auxiliary Committee members in the various counties.

TODAY'S HEALTH — The cash award of $40 received from National for placing first in the 400-1000 membership class was used to send subscriptions of Today's Health to American Missionaries in foreign countries. Over 500 subscriptions have been sold in the state, making our state per cent 124.

BULLETIN — All State and County Board members are asked to subscribe to this magazine. It has proved most helpful to the president during the year.

PUBLICITY — The State Chairman met with the president in June to plan the publicity for the year. Each month an article on some phase of the auxiliary program appeared in Arizona Medicine. This report was read at the September Board of Directors meeting. Each member responsible for writing an article for the magazine was notified two months before the date due for publication — all material came in on schedule.

The State Auxiliary president was asked by the State Medical Association to prepare material about the auxiliary to be used in a brochure which will be given to all doctors coming into the state to practice medicine.

REVISIONS — The constitution and by-laws were printed and copies given to each Board member.

AMERICAN MEDICAL EDUCATION FOUNDATION — Special emphasis has been placed on explaining this program to each auxiliary group, with the result that each organized county contributed to the fund. Silver teas, memorials, bridge parties and sales of dish rags provided the means of procuring the money. $289 has been raised.

Records have been brought up to date by a conscientious and efficient historian.

The attendance at the National Convention in San Francisco in June and the Chicago Conference in November proved exceptionally helpful and inspirational. The prompt and efficient manner in which material was dispersed from Central Office made the year intensely interesting and educational.

My sincere appreciation to each member of my Board for her fine cooperation. After much planning, hours of actual work, and miles of traveling, your president ends her auxiliary year with an even greater enthusiastic conviction that the program of the Woman's Auxiliary to the Arizona Medical Association is the most important civic duty of every physician's wife in our state.

Gladys Storts (Mrs. B. P.)
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His responsibility for supervising the technical phases of the blood bank program will include visits to all branch banks at frequent intervals in order to determine that requirements of the National Institutes of Health are being met.

A graduate of Harvard Medical School and Syracuse University, Dr. Alsever organized and directed the latter's medical center and blood transfusion service. He also was an instructor in pathology at Syracuse Medical School.

During his long public health service employment, he was director of training and professional standards in the division of hospitals, becoming chief of that division in 1949, and, from last November until May 1, he had charge of hygiene of the aging program, Division of Special Health Services.

As part of his public health service association, Dr. Alsever worked in the blood division program of the Federal Civil Defense Administration, serving most recently as deputy director of the health office.

He is the author of several publications in medical journals in the field of blood transfu-

sions and co-author of the textbook, "Blood Transfusion."

Dr. Alsever resides in Phoenix with his wife and their three children.

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"ENDOCRINOLOGY and Metabolism" is the subject for the seventh annual Postgraduate Assembly of the Endocrine Society, being held in Indianapolis, Sept. 26-Oct. 1, with the cooperation of the Indiana University School of Medicine.

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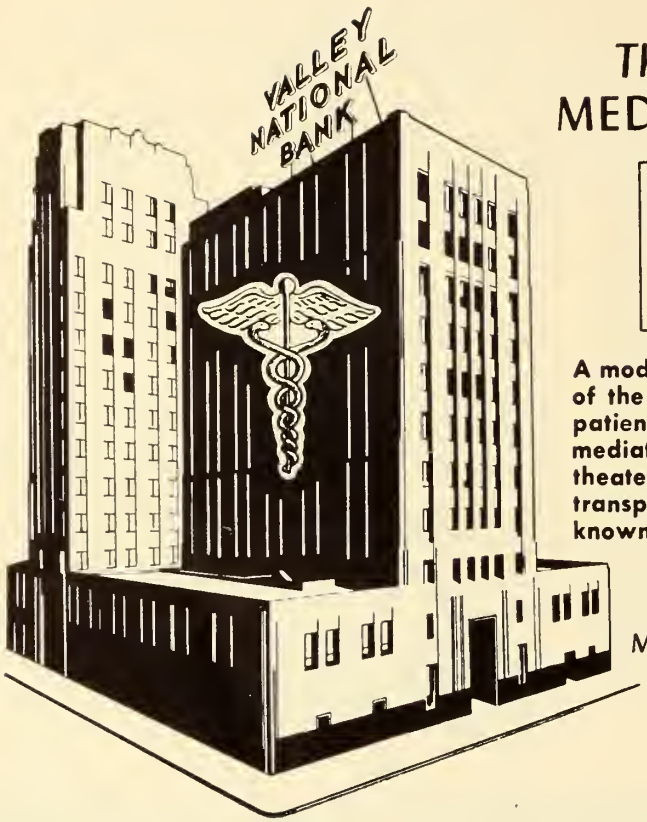
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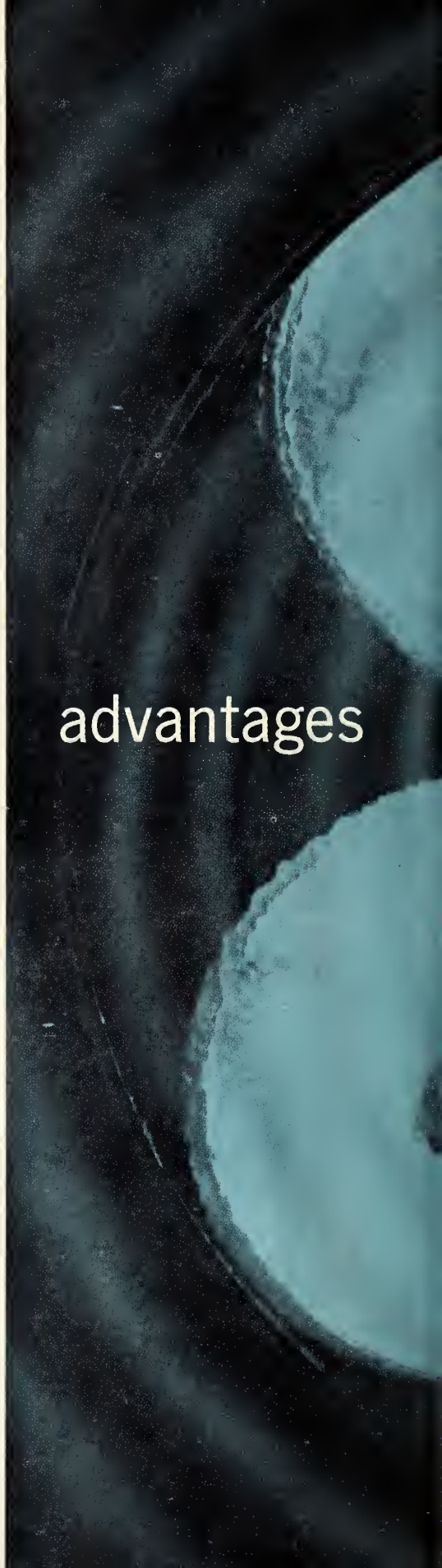
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Original ARTICLES

THE TREATMENT OF CHRONIC PULMONARY EDEMA WITH ALCOHOL VAPORS

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SINCE 1950, a number of papers have appeared in the medical literature about the use of alcohol vapor in acute pulmonary edema.(1-2-3-4-5-6-7-8). This author's experience dates back to 1951 — when its use was instituted in the Phoenix V.A. Regional Office, Outpatient Department. Because of the concentration of chronic pulmonary, cardio-pulmonary, and cardiac cripples, we decided to try alcohol vapor in chronic failure, especially if there was persistent dyspnea, and orthopnea. All patients had previously had digitalization, oxygen, oral and hypodermic diuretics and symptomatic treatment of pain, cough, orthopnea, hypertension, insomnia etc.

Initially we followed the method of Luisada(1) but this was changed to the simpler procedure of Gootnick(5). At first only office patients were treated; but later, as experience showed how much benefit these patients were getting, oxygen, regulator and humidifier were installed in the homes of 36 patients. All of these patients were either in chronic failure or developed failure on very slight exertion or during sleep.

Over a period of three years 98 patients received alcohol vapor inhalations and of these 62 patients came to the office. Patients were free to take thetreatments, or discontinue them, if they felt that the benefit gained was outweighed by the inconvenience of making the trip to the office. Of these patients 14 either got no benefit, or felt worse.

To aid self administration, the method was simplified to an ordinary glass humidifier bottle, oxygen regulator, and tank of O_2. Compressed air cannot be substituted for O_2 because of the increased absorption of nitrogen by already damaged alveoli, according to a personal communication from Dr. A. Luisada. Different concentrations of alcohol were tried, but finally 50% ethyl aleohol was found effective in most patients. This may have to be reduced to 20% alcohol in hypotensive patients who get light headed with higher concentrations. Oxygen is bubbled thru the solution at 2 to 3 litres per minute and is taken 15 to 20 minutes. After the anti-foaming effect of alcohol vapor clears the bronchial and alveolar tree, straight oxygen can be given much more effectively, if desired.

After some experience with alcohol vapor, it was decided to try the effects of combined aminophyllin and alcohol. The patients were asked to evaluate the relative benefit from alcohol vapor alone, and the alcohol aminophyllin combination. The majority of patients thought that the addition of aminophyllin increased the beneficial effect of alcohol vapor inhalation.

The present formula of the stock solution is as follows:

R/ Aminophyllin powder — 60 grains
50% Ethyl alcohol — q.s. 400cc.

About 3 ounces of the above supply is used in the humidifier bottle at a time. If kept stoppered it can be used about a week before the alcohol vaporizes completely. The amount of

aminophyllin is admittedly minute, yet appears to augment the effect of the alcohol vapor.

SUMMARY

(1)—98 patients with severe dyspnea, orthopnea, and angina have been treated with alcohol vapor using O_2 as the carrying agent.

(2)—36 of these patients would be classified as class 4 — functionally.

(3)—84 patients received enough benefit clinically to voluntarily continue the treatment.

(4)—The addition of minute amounts of aminophyllin appears to accentuate the effect.

(5)—This is a relatively inexpensive and simple method of home or office or hospital therapy.

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1008 Profession Building

OXYTETRACYCLINE-HYDROCORTISONE OINTMENT* IN DERMATOLOGICAL THERAPY

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BOTH oxytetracycline (Terramycin) and hydrocortisone have separately found widespread use as topical agents in dermatologic therapy. Because there are a number of skin diseases which should benefit from both of these drugs used together, it was decided to evaluate the efficiency of such a combination. This paper reports the results of such therapy in 100 cases of selected dermatoses with a recently introduced preparation containing oxytetracycline hydrochloride (3%) and hydrocortisone free alcohol (1%) in a white petrolatum base.

RATIONALE

Sulzberger and Witten(1) in a carefully controlled study recently reported that topical hydrocortisone offers the following advantages:

1. Effectiveness in numerous cases resistant to all other forms of therapy.

2. No systemic side effects since negligible quantities are absorbed through the skin.

3. Absence of allergic sensitization to the medication itself.

4. No apparent development of therapeutic resistance even after prolonged use.

Again, Heilesen and co-workers(2), after evaluating 1% hydrocortisone ointment in 111 patients, concluded that in a number of cutaneous diseases the topical use of this preparation produced salutary effects comparable to those achievable by the systemic administration of ACTH, cortisone, or hydrocortisone without the risk of adverse systemic reactions. In other words, the anti-inflammatory and anti-allergic properties of locally applied hydrocortisone in selected dermatoses have been well established as both effective and well tolerated. However, as has been pointed out, the same is not true with topical cortisone therapy, which has been shown to be of little or no value in the topical therapy of dermatoses.(1)

The broad antibacterial spectrum of oxytetracycline is well established and an insignificant incidence of local reactions following its topical use has been reported. In treating over 400 patients with an ointment containing oxytetracycline, Appel(3, 4) observed "not one case of irritation or sensitization even though the patients were in the widest range of age from infancy on". The question as to whether or not the topical use of oxytetracycline will sensitize an individual so that future systemic administration of the antibiotic would be contraindicated, as happens with penicillin and other drugs, has been convincingly shown not to occur by Tschan and Wright(5) who studied 103 patients over a two-year period with adequate laboratory examinations, clinical follow-ups, and careful interrogation histories. These authors report "there was

* Terra-cortril Ointment was supplied for this study through the courtesy of Dr. Harry Rudel of Chas. Pfizer & Co., Inc., Brooklyn, New York.

not a single case of sensitivity to the systemic administration of oxytetracycline (Terramycin) when given concurrently with the use of oxytetracycline ointment topically or some time after the use of oxytetracycline ointment topically". Thus, when indicated, one may use this antibiotic for local therapy with minimal concern for immediate or future complications.

After considering these facts, it is obvious that we have an anti-inflammatory agent and an antibacterial agent both of which are relatively free from possible undesirable side effects and can be used for prolonged periods of time with no antagonism or resistance developing in the local management of cutaneous disease.

PLAN OF THERAPY

Two groups of dermatoses were treated. Group I consisted of atopic eczema, lichen simplex chronicus, pruritus ani and/or vulvae, and contact dermatitis, all with varying degrees of obvious secondary infection. These dermatoses, without secondary infection, are among the group which usually responds best to topical hydrocortisone. It was hoped that with combined oxytetracycline-hydrocortisone ointment the secondary infection could be brought under control without delaying treatment of, or aggravating, the primary condition, and without resorting to systemic antibiotics. The indication for the antibiotic in the combined ointment might be considered to have ceased when the secondary infection was controlled. However, if it became apparent that its presence did not interfere with the therapeutic action of the hydrocortisone, then a further advantage, that of preventing secondary infection during therapy, might be established. This would be the topical equivalent of "covering" systemic steroid therapy with the concomitant use of a systemic antibiotic.

Group II included nummular eczema, infectious eczematoid dermatitis, dyshidrotic eczema, sycosis vulgaris or folliculitis with secondary lichenification, and seborrheic dermatitis. In these conditions infection, or allergy thereto, may play an integral role, and there are present additionally secondary inflammatory changes which might be responsive to topical hydrocortisone.

The ointment was usually prescribed for application with very gentle massage four times daily. Adjunctive measures were held to the minimum possible in a series composed entirely of private patients. In most cases the use of soap was forbidden. Cold water compresses were permitted for severe itching, and in some cases in Group I, a mild sedative was prescribed. In the cases of contact dermatitis, the known or suspected allergens were avoided. Systemic antibiotics or steroids, X-radiation or Ultra-violet therapy were not employed.

Therapeutic effect was graded as excellent, good, or poor. The criteria were as follows. In Group I an excellent result consisted of rapid clearing of the secondary infection, apparently unimpeded by the presence of the hydrocortisone – which at the same time was as clinically effective on the primary condition as would be expected in the absence of secondary infection and oxytetracycline. In such cases the combined ointment was continued to a cure, or, in the cases of atopic eczema, on a reduced schedule of applications – as the individual case permitted – as maintenance therapy. A good result consisted of an equally rapid clearing of the secondary infection along with a favorable effect on the primary dermatosis, but in which continued therapy either did not achieve a cure, or in which other subsequent therapy proved more effective. There were no cases in this group in which this observer considered the result to be poor.

In Group II an excellent result consisted of complete clearing of the dermatosis. In the cases of nummular eczema, infectious eczematoid dermatitis, seborrheic dermatitis, and dyshidrotic eczema – all of which are highly resistant to therapy, cases which recurred on cessation of therapy were still considered excellent results if they subsequently cleared on reapplication of the combined ointment. A good result was judged in this group of cases when a significant degree of healing short of complete clearing occurred. The result was considered poor in those cases in which there was little effect on the dermatosis.

TABLE I
THERAPEUTIC RESULTS

Diagnosis	No. of Patients	Therapeutic response Ex.	Good	Poor
Group I (all with varying degrees of secondary infection)				
Atopic eczema	17	11	6	
Lichen simplex chronicus	5	3	2	
Pruritus ani and/or vulvae	5	3	2	
Contact dermatitis	20	13	7	
Group II				
Nummular eczema	15	8	7	
Infectious eczematoid dermatitis	19	12	6	1
Dyshidrotic eczema	3	1	2	
Sycosis vulgaris or folliculitis with secondary lichenification	4	4		
Seborrheic dermatitis	12	7	3	2
TOTALS	100	62	35	3

COMMENT

Because of the difficulty of controlling a clinical study among private patients, an effort was made to select typical cases of the various dermatoses, the material was presented to the patients with a minimum of enthusiasm, and the results were evaluated against a strict set of criteria.

Generally, the dermatoses in Group I responded at least as well as would be expected with plain hydrocortisone ointment in similar uninfected cases. The accompanying clearing of the secondary infection may be considered a dividend of the combined ointment. In those cases in which the ointment was used for extended periods, no subsequent instances of secondary infection occurred.

The results in Group II were distinctly superior to those which would be expected with plain hydrocortisone ointment. The response of the majority of the cases of nummular eczema and infectious eczematoid dermatitis was particularly gratifying. The cases of seborrheic dermatitis treated were for the most part widespread and exudative. Most included otitis externa, which responded exceptionally well to the combined ointment. In one of the two poor results in this group, the dermatitis cleared completely when the ointment was first prescribed, but was relatively ineffective in a subsequent exascerbation.

No irritation or sensitivity reactions were encountered despite continued and intermittent use of the ointment, in some cases, for periods up to six months. Since the skin diseases selected for this study are among the most frequently encountered in medical practice, it is apparent that there is a broad indication for oxytetracycline-hydrocortisone ointment.

SUMMARY

A series of 100 cases of selected dermatoses was treated with a topical ointment containing oxytetracycline and hydrocortisone. One group of cases consisted of common skin diseases complicated by secondary infection. A second group consisted largely of dermatoses which are highly resistant to ordinary therapy. The results were considered excellent in 62, good in 35, and poor in 3. No instances of irritation or sensitization to the ointment occurred.

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A CONSIDERATION OF THE DRUGS USED IN THE TREATMENT OF DUODENAL ULCER

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My first professional experience in the Treatment of Peptic Ulcers:

I was an intern in Presbyterian Hospital when the late B. W. Sippy was developing his well known method of ulcer management. Not long after I came there one of his patients developed scurvey on the restricted regime of milk, cream, and powders then in use, and not too long after that another of his patients died of intestinal obstruction, showing at autopsy a colon nearly filled with impacted calcium carbonate, a veritable plaster cast of the large bowel. These incidents served to persuade me that the medical treatment of duodenal ulcer has it complications and this persuasion has not declined materially through the years.

The next chapter in my gastroenterological education began when I acquired a duodenal ulcer. This occurred a few years after I left the highly competitive business of practicing medicine in an area where malpractice insurance costs several times the national average, for the supposed calm and security of an academic post in a university. I do not intend to use this experience to challenge the generally accepted thesis that anxiety, frustration and stress are etiological factors in the genesis of ulcers, but rather to question the prevailing concept that an academic post offers more of a protective cloister from the strains and stresses of everyday life than does the maelstrom of a professional practice. To paraphrase a well known confession: The fault, dear Brutus, is not in our stars that we are ulcerous, but in ourselves that we do fester thus.

But etiology aside, having an ulcer provided an opportunity to get acquainted with the innumerable items in the ulcer Materia Medica. It developed the conviction that one can gain a truer understanding and a heartier sympathy by studying disease from both sides of the bed sheet than he can by a unilateral approach. This bivalent study yielded dividends of information not ordinarily described in the literature. For example, I have little doubt that those of you who treat ulcer patients, instruct them to watch their stools carefully so that the first indications of hemorrhage may be noted. But do you know that calcium carbonate increases the specific gravity of the stool so that it approaches that of freshly mixed concrete, and that stools laden with it plunge downward like molten lead from a shot tower, to elude the passer's view in all but a few of the kinds of plumbing fixtures in current use? Do you know that sodium bicarbonate gives a pungent flavor to the belches it induces, or that there is a tintinabulation to the borborygmi produced by magnesium oxide, or that aluminum hydroxide conveys a sort of astringent quality to the flatulence which plagues the ulcer patient? The discovery of enterogastrone occurred in the laboratories with which I was associated. When this had progressed to the point at which some consideration was entertained as to its clinical usefulness, it was injected into some suitable candidates. The distress which this caused, was so excruciating and audible, that it inhibited my gastric secretion even though I was several doors removed. Since Webster's definition of a hormone considers it to be that of a chemical product of an organ or of certain cells of an organ, which has a specific regulatory effect upon other cells quite remote from its origin, there is no doubt that enterogastrone is entitled to be called a hormone. It also happens that the discovery of mucin as an anti-ulcer remedy originated in the laboratories with which I was associated. Naturally I tried it. And I can give personal testimony, that when I brought some of this home, and my wife prepared it for me to take, this smelly slime inhibited the gastric secretion of the whole family. No doubt the current preparations of these two agents have been refined to the extent that these comments are no longer applicable, but I suspect that some of their anti-ulcer efficacy may have been refined away also, as neither agent has achieved a place of great importance in this field.

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In addition to this personal experience, I think that I should mention that I am on the Council on Pharmacy and Chemistry of the AMA and thereby have the opportunity to scrutinize the claims for products submitted for use in the treatment of ulcer, in conjunction with the corresponding evidence.

The only fundamental physiological abnormality which has been found associated with duodenal ulcer is an increase in the total amount of acid gastric juice secreted by the stomach. Correspondingly the rationale of ulcer therapy consists of measures directed at decreasing the secretion of acid gastric juice, or of neutralizing it after it is secreted, or of attempting to enhance the resistance of the tissues to gastric juice, or to combinations of these measures. I shall deal briefly with these in reverse order.

The insusceptibility of freely living cells, such as bacteria, yeast cells, etc. to digestion by proteolytic enzymes has intrigued many investigators and the number of explanations for this resistance which have been suggested indicates that the real reason is undetermined. Whatever the nature of this insusceptibility it is of a type that is easily lost subsequent to injury or death. Living organized tissue also displays considerable resistance to digestion, although this seems to be less than that of the unicellular organisms. It is possible that the reason for the difference between freely living cells and the cells of organized tissue in this respect is the dependency of the latter upon the proper functioning of an adequate circulatory system. Regardless of the explanation there is nothing known that has been shown specifically to increase the resistance of the gastro-duodenal mucosa to the digestive effect of gastric juice and have a healing effect upon ulcer as a consequence. I confess to a certain disappointment that some of the eager beaver proponents of the virtues of chlorophyll preparations for healing all other kinds of ulcers, have not been inspired to claim that Nebuchadnezzar resorted to eating grass in order to cure a duodenal ulcer.

As to neutralizing the gastric juice after it has been secreted, it is a question of "you pays your money and you takes your choice". There are buffer antacids such as Magnesium Trisilicate and Aluminum Hydoxide, non-buffer antacids such as Calcium Carbonate and Magnesium Oxide, systemic alkalinizing agents such as Sodium Bicarbonate and Sodium Citrate, ion exchange resins, Mucin, milk proteins, and many others as well as innumerable combinations of such agents. The specific attributes of these individual agents are well known to you and require no elaboration on my part. Some cause constipation while others cause catharsis. Some are tastier and more convenient and easy to take than others. Some are cheap and some are more expensive. It may be argued that this plenitude of neutralizing agents proves that none can be called ideal or without shortcomings. This may be so, but on the other hand it can also be said that most of them do what we have a right to expect of them to a surprisingly excellent degree. They can be given over long periods of time without fear of addiction, tolerance, chronic intoxication or the vexing medley of colorful idiosyncrasies and sensitizations such as dermatitis, neuritis, agranulocytosis or aplastic anemia. In these days, when the harvest of such drug induced difficulties has grown to formidable proportions, this is no small compliment. The main problem comes from expecting an intermittently administered antacid to cope with acid gastric juice which is not elaborated in a correspondingly intermittent fashion. The recent suggestion of administering antacids by means of chewing-gum preparations is a step in the direction of coping with this aspect of the problem. Perhaps if ulcer patients can be taught to chew and swallow while asleep, antacid medication may achieve still more salubrious results.

Of late years there has been a renewed interest in various methods of inhibiting gastric secretion, which in turn has reemphasized the importance of studies dealing with the mechanism of gastric secretion. I shall not deal with this subject except to remind you that, since gastric secretion is influenced by a variety of nervous and chemical mechanisms, we could expect that there would be a variety of ways in which it could be inhibited.

On a priori grounds, the most logical method to think of first is the use of enterogastrone, since there is evidence that this is the normal physiological inhibitor which the body itself employs. Unfortunately, the preparations which have been tested, have only a modest effectiveness at best, and exhibit this only when they are injected parenterally. It thus falls short of meeting the criteria for practicable ulcer man-

agement.

Since histamine is an extraordinarily potent stimulus to gastric secretion, and since there was much reason to believe that some of the chemical factors involved in gastric secretion were either histamine, histamine-like substances, or histamine-liberating agents, there was a distinct feeling of disappointment that the antihistaminic agents proved of little value in inhibiting gastric secretion. In view of the fact that these agents antagonize the actions of histamine in so many diverse places, and by a method which appears to be that of competing with histamine for so-called cell receptors, the impotence of these preparations with respect to gastric secretion is puzzling and challenging. It seems likely that a suitable explanation for this discrepancy might be rewarding to the ulcer problem.

Since the formation of the hydrochloric acid of the gastric juice appears to involve the action of the enzyme carbonic anhydrase, there was speculation that inhibitors of this enzyme might reduce acid production by the stomach. With the discovery of Diamox as a potent inhibitor of carbonic anhydrase, this avenue of attack became subject to test. Intravenous administration of this agent may lower the output of hydrochloric acid in dogs, but the oral administration of tolerated doses has not proved to be very effective in reducing the gastric secretion of ulcer patients. It is too early to conclude that this approach must be abandoned, but at present it cannot be said to be particularly promising.

The greatest interest has centered in various so-called cholinergic blocking agents. Belladonna and its major alkaloids, Atropine and Scopolamine were of course the first agents in this general category that were known. They act at the peripheral neural mechanism to block the action of the acetycholine which is released by neural activity. By doing so they reduce gastric secretion. The rub of course is that they also do a number of other things via their peripheral action on the eye, the bladder, etc., as well as by their action on the central nervous system. These other effects limit the doses that can be tolerated and thus impose limits to the anti-secretory effect which it is practical to achieve. With increasing knowledge as to the chemical structure of these agents, the chemists have synthesized a great many related compounds and it has been learned that by quaternizing the tertiary nitrogen of many of them, the compound achieves a greater anticholinergic action particularly at the ganglia and neuromuscular junction. The result of this synthetic work is that we now have compounds which can arrest the vagal secretory impulses exclusively at the ganglia, some act exclusively at the postganglionic peripheral nervous mechanism, and some which appear to have a dual action at both of these sites. This greater versatility of action has prompted the hope that certain compounds might have a more selective type of gastric secretory inhibition than does Atropine, which has, as indicated, almost exclusively a peripheral effect. We need to inquire into the validity of this hope.

Let us begin with a consideration of the agents which produce ganglionic blockage more or less exclusively. One of the first of these to be discovered was Tetraethyl Ammonium Chloride. It was soon learned that this compound was effective only when injected intravenously and also only for a short period of time. In due time came Hexamethonium which proved to be fairly effective on oral administration and to have a duration of action of several hours. This made it feasible for clinical trial. It was soon clear, however, that the ganglionic blocking agents act indiscriminately upon the ganglia of both the parasympathetic and the sympathetic systems and that you cannot produce inhibition of the former without a corresponding degree of inhibition of the latter. This is the pharmacological background for the actions of Hexamethonium, which W.D.M. Paton has portrayed so graphically in his description of the hexamethonium man.

"He is a pink complexioned person, except when he has stood for a time, when he may get pale and faint. His handshake is warm and dry. He is a placid and relaxed companion; for instance, he may laugh, but he can't cry because the tears cannot come. Your rudest story will not make him blush, and the most unpleasant circumstances will fail to make him turn pale. His collars and socks stay very clean and sweet. He wears corsets and may, if you meet him out, be rather fidgety (corsets to compress his splanchnic vascular pool, fidgety to keep the venous return going from his legs). He dislikes speaking much unless helped with something to moisten his dry mouth and throat. He is long-sighted and easily blinded by bright light. The redness of his eyeballs may suggest

irregular habits and in fact his head is rather weak. But he always behaves like a gentleman and never belches or hiccups. He tends to get cold and keeps well wrapped up. But his health is good; he does not have chilblains and those diseases of modern civilization, hypertension and peptic ulcer pass him by. He is thin because his appetite is modest; he never feels hunger pains and his stomach never rumbles. He gets rather constipated so that his intake of liquid paraffin is high. As old age comes on he will suffer from retention of urine and impotence, but frequency, precipitancy, and strangury will not worry him. One is uncertain how he will end, but perhaps if he is careful, by eating less and less and getting colder and colder, he will sink into a symptomless, hypoglycaemic coma and die, as was proposed for the universe, a sort of entrophy death."

Most physicians, and I believe most patients as well, consider these effects a rather high price to pay for gastric secretory inhibition and it seems unlikely that any other ganglionic blocking agent could bring about secretory inhibition without producing all of these effects.

I mentioned earlier that the belladonna alkaloids exert their cholinergic blocking action exclusively at the postganglionic nerve endings. This is not strictly so when large doses are employed, but is essentially true for therapeutic doses. Now as to these agents, although still widely used, I think it fair to say that they have had a sufficient test of time to permit the conclusion that they fall short of being all that one might wish. Beginning with Banthine and extending through Pranxtal, Antrenyl, Pamine, Monodral, Probanthine and many others we have a group of compounds which are intermediate in their action between Hexamethonium on the one hand and Atropine on the other — that is to say most of them have both a ganglionic blocking action and a post ganglionic peripheral action. For the most part, the firms which promote these drugs boast of this dual action and claim superiority over Atropine largely on this basis. The question naturally arises, if neither Hexamethonium or Atropine is very satisfactory in the treatment of ulcer, why should we expect a drug to be useful which manifests the effects of both? Could it be that a partial ganglionic blockade concomitant with a partial peripheral blockade gives more of the desired effect with less of the undesired effects than a more complete block at either site alone? I have not found any evidence that this question has been studied, although it would be very simple to combine Hexamethonium and Atropine in such a way as to test this hypothesis. This would seem to be a better way to resolve this question than would the study of drugs which have a dual action, since the drugs of the latter class do not produce an equal intensity of effect upon both the ganglia and the postganglionic regions. As a matter of fact it is not established that these newer dual acting antisecretory agents actually produce a substantial degree of ganglionic blockade when therapeutic doses are administered to a man.

Unfortunately none of these newer agents can produce effective inhibition of gastric secretion without simultaneously producing side effects such as dryness of the mouth, blurring of the vision, difficulty in urination, etc. It is commonly claimed that these side effects subside with continued administration of the drug. I have not, however, seen any reliable evidence which indicates that the antisecretory effect is singularly immune to the development of a similar degree of tolerance. The reported instances of ulcer recurrence while patients were continued on this type of medication would seem to indicate that these drugs may lose some of their antisecretory effect as time progresses.

Nevertheless there appears to be little doubt that some of these compounds have a certain superiority over Atropine as gastric anti-secretory agents. I do not believe that this is due to any greater selectivity with respect to their gastric effect. They have less action upon the central nervous system and in many instances their toxicity is less, which means that they can be given in doses which are limited by the various side effects mentioned, but are not further limited by these factors. I believe that most of the instances of practical superiority to Atropine may be attributed to this relative absence of central effect. It is, of course, entirely possible that some virtue resides in the ganglionic block action and that the blocking of local gastrointestinal reflexes plays a useful role, but I do not know of any evidence to support this view. The study suggested of the combined effects of Atropine and Hexamethonium might contribute some information on this point. In summary, these cholinergic blocking agents appear to be useful only as adjunctive

agents in the treatment of ulcer and antacids and dietary measures cannot be disregarded.

Another drug which is employed to help in the matter of inhibiting gastric secretion is Phenobarbital. This agent is unique in having almost universal endorsement. There are countless preparations in which it is combined with Belladonna or Atropine, and every pharmaceutical house that develops a new cholinergic blocking agent is impelled to market a preparation combined with Phenobarbital. As a pharmacologist I cannot refrain from voicing a mild protest at this indiscriminate intermarriage between two drugs merely because they are both used in treating the same condition. The route of administration and frequency of administration of a drug are directly contingent upon its rapidity of absorption, duration of effect and so on and it is quite inconceivable that all these agents have properties along these lines that are parallel to those of Phenobarbital. Nevertheless the protest is only mild in this particular instance, because the evils which result from illogical combinations of drugs are less evident here than in most cases. Because of the long duration of action of Phenobarbital it is possible to achieve similar degrees of sustained sedation with considerable variation in the intervals of administration if compensating adjustments are simultaneously made as to the dose.

The rationale for the employment of Phenobarbital would appear to be dependent upon the fact that anxiety and related emotional states augment the secretion of gastric juice, and the corollary hope that mild sedation would act as a buffer to "the slings and arrows of outrageous fortune" and thereby prevent or decrease the excess secretion from such causes. Wolf has demonstrated that a stressful interview can break through this buffering effect and cause a pronounced secretion of gastric juice. You may recall that he has also demonstrated that a stressful interview can break through the inhibiting effect of the cholinergic blocking drugs. I do not believe that his observations deny the potential usefulness of either category of agent, but rather that they should persuade us not to rely solely upon either method. In this connection it would be interesting to know if the conjoint use of phenobarbital and a cholinergic blocking agent offered a more effective barrier than either one alone. Such a study would provide a proper background for the almost universal practice of prescribing them together.

A potential candidate as a substitute for Phenobarbital has appeared in Rauwolfia and its alkaloid Reserpine. It appears to have many useful properties as a mild sedative, but at present it does not seem that it can challenge the place of Phenobarbital in the treatment of ulcer since it has a mild stimulating effect upon the secretion of gastric juice.

In conclusion, I would like to summarize the ulcer problem by the following rhyme:

DUODENAL ULCER

If perhaps you should chance to get
An ulcer of the duodenum,
They'll milk and cream you every hour
With powders in between 'em.

But if perchance your luck should be
An ulcer of the duodenum,
They'll give you Phenobarbital,
Belladonna and ad nauseam.

They'll give you cereals and such,
Strained baby foods and eggs,
Naught but the tasteless foods will do
No matter how one begs.

They'll give you drugs till you can't see,
And then some more, 'till you can't pee,
You chew your food, but it stays dry
And though you're sad, you cannot cry.

Now if or when all measures fail
And voices sing "Nearer My God to Thee"

They'll bring a surgeon in to do
Resection or vagotomy.
If he resects your dumping valve
A dumping syndrome you will have.

If he resects your vagus nerve,
The one with which you worry,
Your bowels may slow down too much
Or maybe too much hurry.

No matter what you do, you lose
You spend the major part of life
Yearning for steaks, cigars and booze
Instead of drugs and surgeon's knife.

It's a mistake to ulcerate
Your duodenum or duodenum,
The next time it occurs to me
I think I'll take laudanum.

RADIATION THERAPY IN THYROTOXICOSIS

Don E. Matthiesen, M.D.
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IN THE treatment of thyrotoxicosis there appears currently to be a swing toward the use of radioactive iodine to the exclusion of other equally and sometimes more efficacious methods. Although the literature on the uses of various therapeutic agents in this disease is voluminous, it is felt that a brief review with particular reference to irradiation is not out of order. The glamour and prestige associated with using radioactive materials in these "atomic" times tend to color our judgment with respect to older and more prosaic, albeit more thoroughly proven, methods.

Exclusive of radiation therapy, medical treatment for thyrotoxicosis today has been relegated to minor cases or to preoperative preparation for thyroidectomy by antithyroid drugs and iodine. Lack of enthusiasm for medical management is apparently explained by the large number of surgeons willing to undertake thyroidectomy and by the dramatic attractions of the atomic cocktail. The fact remains, however, that the anti-thyroid drugs are able to control almost any case of Graves disease if given in adequate amounts. In addition, with the help of frequent BMR and protein bound iodine determinations, the final clinical result can be controlled with a nicety that cannot surgically be attained. It is true that the disease usually recurs upon withdrawal of the drugs, but the same can be said of most metabolic disorders. The number of thyrotoxic patients who are required to take drugs after thyroidectomy or radiation therapy is not exactly small.

Surgical ablation of the thyroid, following careful medical preparation, still remains fundamentally the treatment of choice. In the secondary thyrotoxicosis of toxic nodular goiter, in the presence of cardiac failure or auricular fibrillation, in any case where there is tracheal compression or mediastinal pressure, and in those severe cases where quick relief is essential, surgery can bring rapid and brilliant results. This cannot be said for medical treatment or for radiation therapy.

A patient who does not tolerate antithyroid drugs and who is a poor surgical risk is a good candidate for radiation therapy. This does not automatically mean, however, that he is a good candidate for treatment with radioactive iodine. As applied to thyroid disease, the terms "radiation therapy" and "I^{131}" are not synonomous.

Although almost forgotten in the flurry of enthusiasm for I^{131}, conventional xray therapy for thyrotoxicosis has much to recommend it, and deserves consideration in many cases. As far as suppressing thyroid function is concerned, and in terms of cure and life expectancy, long term results compare favorably with those of surgery. Xray therapy causes no mortality per se, thyroidectomy is avoided, subsequent tetany is unknown, and the treatments are painless and not frightening. Recurrent laryngeal nerve injury and hypothyroidism are not seen. The risk of cosmetic blemishes is now extremely small. Increase in preexistant exophthalmus is seen much less often after x-ray irradiation than after surgical treatment. Not only are the hazards and discomforts of surgery and postoperative complications avoided, but x-ray therapy in thyrotoxicosis has proven effectiveness. Follow-ups are long enough to permit critical appraisal of its worth.

Conversely, treatment with I^{131} has not yet been proven, and there are many deficiencies in our knowledge concerning its potential usefulness and dangers.

There is not yet available any means for accurately measuring per gram uptake of I^{131} in the thyroid gland. Numerous reviews have shown that estimations of thyroid volume based on clinical and roentgenographic findings are highly inaccurate. Frontal silhouettes of the thyroid based on scintigrams are equally inadequate. Thus, dosage of I^{131} based upon uptake studies is likely to result in under or over treatment in a high percentage of cases. The higher incidence of myxedema after radioiodine treatment than after surgery would seem to bear that out.

Radiation doses from I^{131} and x-ray ordinarily are quite different. Whereas the thyroid can be more or less uniformly bathed with external radiotherapy, radioautographs show that I^{131}

is often deposited in irregular patches throughout the gland. Some regions may receive much less radiation than others. If a minimum dose of 3000 to 3500 roentgens (the usual acceptable minimum with modern x-ray technique) is to be delivered to the cells concentrating the least amounts of the isotope, then other cells may receive as much as 20,000 to 30,000 equivalent roentgens.

X-rays in ordinary therapeutic doses will not affect a normal thyroid, but will cause diminution of activity of acinar epithelium if it is hyperplastic. I^{131} produces similar histological changes in the diseased thyroid. However, in the normal gland, we can only guess at the effect which 20 or 30 thousand thousand equivalent roentgens might have upon individual cells or groups of cells.

Slow progressive response to treatment may be advantageous at times; but in those cases where more rapid relief from symptoms is needed, antithyroid drugs and iodine can be given effectively in conjunction with x-ray therapy. This cannot be done where I^{131} is being used because of the interference by these drugs with the I^{131} uptake.

Long term surveys reveal only negligible carcinogenic effect from x-ray therapy to the thyroid, and the same probably holds true for radioiodine. However, this has not yet been verified, and cannot be clearly proven until present patients can be followed for many years. Serious sequelae to radiation therapy take a long time to develop, and at least 10 to 20 years will be required to determine the real incidence of carcinogenesis. Carcinoma of the trachea and thyroid have been reported.

In general, younger patients in whom the disease is not of long duration, respond better and more quickly to x-ray therapy than do older patients with long histories of hyperthyroidism. The same presumably holds for I^{131} therapy. Restriction of radioactive iodine because of possible carcinogenic effect to older patients (whose disease responds relatively poorly to irradiation), limits still further the likely usefulness of the isotope.

With the present state of our knowledge, I^{131} in treating thyrotoxicosis offers generally less than does conventional x-ray therapy. For those cases in whom radioiodine is selected, the most convenient method of management appears to be that of using multiple small doses. Arbitary doses, usually 3 to 6 mc, are given at 2 to 3 month intervals until the patient becomes euthyroid. No scintigrams are required. Using this method, Werner reports 4% of 103 cases developed myxedema and 92% were rendered euthyroid.

The scintigram is highly valuable in picturing distribution of I^{131} in the thyroid. In addition, after an initial determination of the total I^{131} uptake, serial radioiodine blood levels permit determination of the rapidity with which I^{131} fixed by the thyroid leaves the gland. However, I^{131} uptake will not substitute satisfactorily for clinical judgment. Careful clinical appraisal of size of the thyroid and general physical status are invaluable. The patients' own estimates of improvement have been found particularly reliable. The BMR properly done and repeated still constitutes a valuable study, and should not yet be discarded.

Radioactive iodine should not be used indiscriminately. Use of the isotope is preferred in older patients or with those of limited life expectancy, and those using it should make strenuous efforts to follow their cases. In other patients, its use should await more complete evaluation.

The safest and fairest philosophy is to utilize tried and proven methods in average cases.

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PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL CASE 37521

Presentation of Case

FIRST Admission. An eighty-year-old woman was admitted to the hospital because of diarrhea.

Six months prior to admission the patient noted the onset of foul smelling diarrhea, with 4 to 5 loose stools a day; she noted they caused an oily film on the water. This was in marked contrast to her previous state of mild chronic constipation. She also noted "gas" and had occasional episodes of nausea and vomiting. There were no definite abdominal cramps, but there was some vague abdominal discomfort. Shortly after the onset of symptoms a gastrointestinal series showed a normal esophagus and some gastric and duodenal dilatation with diminished peristalsis. The dilatation was most marked in the duodenal peristalsis. The dilatation was most marked in the duodenal loop, where the barium had a tendency to pool; although the loop was demonstrated as far as the ligament of Treitz, no specific obstructing lesion was made out. A barium-enema examination was negative. The patient continued to have diarrhea; one month prior to admission she first noted abdominal distention, accompanied by some general discomfort but no localized tenderness. Three weeks prior to admission she had a few days of moderately severe left-upper-quadrant tenderness that was unrelated to eating. One week before admission bilateral edema of the lower extremities appeared and persisted. For a few years she had intermittent lower-leg edema that subsided with rest; this was usually unilateral and was attributed to varicosities. At this time the serum protein was 6.3 gm. per 100 cc., the blood lipase was normal and a stool examination showed a lowered trypsin content. Her weight had fluctuated during the course of the illness; 170 pounds at onset, 130 pounds one month prior to admission and 140 pounds on admission. There had been no bloody or tarry stools or hematemesis. For the ten days before entry she received pancreation, menadione, and vitamins and was on a low-fat, low-carbohydrate diet. For a few months she had received liver injections.

She had always had remarkably good health. She had had an appendectomy 40 years previously, right mastectomy for a "lump in the breast" thirty years previously and an operation for hammer toe one year previously.

Examination revealed a thin woman who appeared somewhat weak but in no acute distress. The thyroid gland was approximately twice the normal size; it was a diffuse non-nodular enlargement. An old right-mastectomy scar was visible. The abdomen was markedly distended. There was no tenderness or palpable organs or masses. Rectal examination was negative except for hemorrhoids. There was bilateral pitting edema to the knees and some stasis dermatitis.

The temperature was 99°F., the pulse 88 and the respirations 20. The blood pressure was 120 systolic, 70 diastolic.

Examination of the stools showed them to be soft, bulky and greasy, with a normal number of undigested muscle fibers; analysis showed 3 plus soaps and split fat and a normal amount of neutral fat. The urine was normal. Examination of the blood revealed a hemoglobin of 10.5 gm. and a white-cell count of 2600, with a normal differential. The non-protein nitrogen was 30 mg., the fasting blood sugar 95 mg. and the total protein 5.71 gm. per 100 cc., with an albumin-globulin ration of 2.0. The serum amylase was 31 units per 100 cc., the serum lipase 0.8 cc. and the van den Bergh reaction within normal limits. A cephalinflocculation test was + in 24 and 48 hours, and the prothrombin time was 24 seconds (normal, 20 seconds). A bromsulfalein test showed 7 per cent retention. The glucose-tolerance curve was within normal limits. A tuberculin test was negative. A vitamin A tolerance test (200,000 units, by mouth, in oleum per-

comorphaum) showed at the start 0.79 units per cc.; at 1 hour, 0.67 units per cc.; at 2 hours, 0.68 units per cc.; at 5 hours, 1.24 units per cc.; and at 6 hours, 1.13 units per cc. The carotenoids averaged .51 units per cc. An x-ray film of the chest showed the lung fields to be large and bright, with prominent linear densities throughout. The diaphragmatic motion was moderately limited. The heart and aorta were unremarkable. A gastrointestinal series was negative except for a small hiatus hernia and deviation of the trachea and esophagus to the right in the region of the suprasternal notch, with compression of the trachea anteriorly in this region. Parencentesis yielded 2300 cc. of cloudy amber fluid with specific gravity of 1.010. The fluid contained 770 red cells per cu. mm.; culture and guinea-pig innoculation were negative. Cytologic examination was negative for tumor cells.

At peritoneoscopy the liver, stomach and intestines appeared normal and the pelvic organs were slightly inflamed; a few 1- to 2- mm. nodules were seen in the parietal peritoneum, stomach and liver. A biopsy of one nodule showed fat and fibrous tissue with mild chronic inflamation. The patient was discharged on the nineteenth hospital day, with her condition unchanged.

Final Admission. She was readmitted one month later because of vomiting. While at home she was on a 3000-calorie diet and received liver injections, pancreatin and menadione. She was almost completely bedridden and had occasional periods of mild confusion. Bowel movements were from one to four per day. She required paracenteses three weeks and one day before admission. Three weeks prior to admission she noted external hemorrhoids, and three days prior to admission she became nauseated and vomited about half a cupful of bright-red blood. One day before admission she vomited approximately a bowlful of dark-brown material and noted that her stools were very dark in color.

Physical examination revealed a wasted, chronically ill woman in no acute distress. The mass in the neck was unchanged from the previous examination. The lungs showed decreased resonance on the left and a few crepitant rales at the base. The abdomen was distended; shifting dullness and a fluid wave could be demonstrated. The thoracoepigastric veins were distended, and the flow was from below. The liver was enlarged and tender, with the edge 4 fingerbreadths below the right costal margin. There was right-costovertebral-angle tenderness. Hemorrhoids were again noted. There was 4 plus ankle edema and a few distended varicose veins over the thighs.

The temperature was 99.2°F., the pulse 80 and the respiration 20. The blood pressure was 100 systolic, 70 diastolic.

The urine examination was negative. A stool guaiac test was ++. Examination of the blood showed a hemoglobin of 10 gm. and a white-cell count of 7400, with a normal differential. The total protein was 5.71 gm., with an albumin-globulin ratio of 1.7, and the nonprotein nitrogen 27 mg. per 100 cc. The prothrombin time was 26 seconds (normal 19.5 seconds). The serum calcium was 8.7 mg., the phosphorus 3.0 mg. and the phosphatase 4.4 units per 100 cc. A gastrointestinal series revealed curling of the esophagus, with rather prominent mucosal folds in the lower portion suggesting varices. The fundus of the stomach was pressed on superiorly and laterally by an enlarged mass in the region of the spleen. The stomach was moderately distended and showed delayed emptying; the duodenal loop could not be adequately visualized. A film taken several hours later showed incomplete emptying of the stomach.

On the ninth hospital day the patient vomited small amounts of dark-brown guaiac-positive material. The abdomen was much more distended and very tympanitic, but not tender. Peristalsis was moderately active. A plain film of the abdomen showed the stomach to be tremendously distended. The patient continued to vomit blood with gastric contents, became semicomatose and died on the fifteenth hospital day.

Dr. Geo. G. McKhann

This case presents the problem of an 80 year old woman whose illness began about eight months before it ended. The present symptom was a chronic, foul steatorrhea, followed by gas, nasua, vomiting, abdominal discomfort, distention, left upper quadrant tenderness for a few days, edema of the legs, weight loss of 40 pounds followed by a gain of ten pounds (the gain no doubt water retention), confusion, ascites, enlarged liver and probably spleen, hemorrhage from the upper gastro-intertinal tract, hemorrhoids, and upward flowing venous collateral circulation on the abdomen and thorax, and no

doubt about the esophagus, according to x-ray observation. Hypo-tension, low grade fever, near normal pulse and respiration were reported. The thirty year old mastectomy is probably irrelevant except to suggest a cancer prone patient. The diffusely enlarged thyroid is also probably not pertinent, although it does compress structures in the neck. It might have caused a chylous ascites by compression of the thoracic duct, and it may have been a primary carcinoma, with liver and abdominal metastases, although very unlikely since it was not very nodular.

At her age the above clinical course and signs are most likely the history of an intra-abdominal malignancy with blockage of the inferior vena cava by a lesion originating in the upper gastrointestinal tract, which obstructs the outflow from the stomach and by x-ray at or beyond the duodenum. At this point the question is what and where. In Boston they did a mass of laboratory and x-ray studies which complicate this case no end as far as I am concerned. In Phoenix during her first admission I would have called on one of our competent surgeons for an exploratory operation, and let the hospital pathologist confirm our suspicions. There is no mention of jaundice. Van den Bergh was normal. They did not do a needle biopsy of the liver.

Steatorrhea may be caused by five possibles; diseases of the pancreas, absence of bile, blockage of the intestinal lymphatic drainage, hurried transport and idiopathic steatorrhea or non-tropical sprue. Absence of bile in the bowel should have been accompanied by jaundice and blockage of the lymphatic drainage by chylous ascites. Neither of these are reported. Hurried transport alone seems inconsistent with the severity of her symptoms and x-ray findings. So, pancreatogenous and idiopathic steatorrhea or non-tropical sprue are possibles.

Pancreatic and biliary secretions are normal or only slightly reduced in either type of sprue, tropical or non-tropical. This should differentiate these from steatorrhea due to deficiency of such secretions. Her stools contained a "lowered trypsin content", a sign against sprue. The differential of sprue includes metastatic malignancy to the retroperitoneal lymph nodes, carcinoma of the pancreas, stone or tumor of the duct of Wirsung, Whipple's disease or intestinal lipodystrophy, intestinal strictures and anastomoses such as gastro-jejuno-colic fistula, and even Addison's disease, because of the hypotension, weakness and pigmentation. Strictures and anastomoses are out because of the x-rays. Addison's disease does not follow the course of our patient. Whipple's disease, or intestinal lipodystrophy, should have produced a chylous ascites, and the lacteals should have been full of fat and milky substance on peritoneoscopy, so that is out.

She had an x-ray of the G.I. tract shortly after the onset of her symptoms which showed gastric and duodenal dilatation with pooling in the duodenal loop and diminished peristalsis. This may have been functional, but might be due to an obstructive lesion in the region of the terminal duodenum. The negative barium enema aids in discarding a colonic lesion. Later the chest x-ray was essentially negative except for possible emphysema with linear densities throughout. These might be metastatic. And the second G.I. series was normal except for a hiatus hernia and the rightward deviation of the esophagus and trachea in the region of the suprasternal notch. No help here. A third G.I. x-ray showed esophageal varices, a large mass in the region of the spleen (Was it the spleen? I believe it was.), a distended stomach with delayed emptying so that the duodenum could not be visualized. This must have been due to an obstructive lesion in or near the duodenum. On the ninth hospital day a plain film showed the stomach tremendously distended, more evidence of obstruction. Treatment was certainly sketchy or was not mentioned, so that I am forced to conclude that her physicians either thought she had a hopeless disease, or else judging from the mass of laboratory studies right up to the last they were still trying to decide what she had and what to do. In past cases from the Massachusett's General I have observed no reluctance to do exploratory surgery, so I am confused.

Let us look at the laboratory studies. She has a mild hypoproteinemia with a normal A/G ratio, normal lipase, urine, NPN, van den Bergh, fasting blood sugar, and glucose tolerance curve, phosphorus, and cephalin flocculation. The phosphatase was elevated by a fraction. These tend to exclude serious disease of the kidneys and liver. We are not told whether the glucose tolerance curve was for ingested or intravenous glucose. I am presuming that it was oral and reflects absorption of glucose from the bowel which is against idiopathic steatorrhea. If it

were an intravenous test, idiopathic steatorrhea would not affect it. The low amylase suggests a chronic pancreatic disease, such as pancreatitis, or perhaps chronic obstruction of the pancreatic ducts. The lowered trypsin in the stool also suggests disturbed pancreatic function. The normal amount of undigested muscle fibers opposes that. The positive stool guaic test confirms the gross gastro-intestinal hemorrhage, but does not point to a source. The stool was greasy with normal neutral fats with an apparent increase in split fats and soaps, but we are not given quantitative results. This suggests a normal lipase and bile function, but failure to absorb which might fit sprue, hurried transport, malignancy or hepatic disease. The hemoglobin of 10 gm. indicates a moderately severe anemia which might be nutritional, due to bleeding, or malignancy. The WBC of 2,600 once with a normal differential with later both normal is puzzling. Leucopenia with lymphocytosis is said to occur in tropical sprue, so such might occur in idiopathic steatorrhea. Ascites may occur rarely in sprue, and also edema of the lower extremeties. The somewhat decreased prothrombin time indicates some degree of liver dysfunction, as does the 7% retention of bromsulfalein, unless 5 mg. per kilo was the test dose, then that may have been within normal limits. The negative tuberculin test should exclude a tuberculous peritonitis as the cause of her illness and ascites. The serum calcium of 8.7 is just under normal, and is probably related to the increased fatty soaps in the stool, but I do not consider it low enough to make a diagnosis of idiopathic steatorrhea tenable.

The vitamin A tolerance curve, I am told, is not a very accurate nor definitive test. In sprue a flat curve results. Normally after a test dose of 0.1cc of percomorph oil per pound of body weight a rise of 130 units in 3 to 7 hours is expected. The best our patient could do was 1.24 units at 5 hours, which is certainly a positive test, Our patient's cartenoids were 0.51 units per cc, which is very low judging from figures that I found, which gave a normal of 100 to 300 units. These are low in any case of impaired absorption, causes of which include deficiency of pancreatic enzymes, coeliac disease, or impaired fat absorption whether due to a gastrointestinal malignancy or hepatic disease. The intestinal bleeding is against idiopathic steatorrhea, and there is insufficient evidence of liver disease to account for hemorrhage due to cirrhosis.

The peritoneoscopy reveals an inflammation in the pelvis, and small nodules which proved to be fat and fibrous tissue with inflammation. Could these be tubercles? Or a broken down tumor implant?

The diagnosis rests between cancer of the pancreatic-duodenal area and a nutritional disease, sprue plus cirrhosis. Choices are:

First: Carcinoma of the pancreas, or duodenum.

Second: Idiopathic steatorrhea with cirrhosis and hemorrhage from esophageal varices.

Third: An inflammation, chronic peritonitis involving the pancreatic-duodenal area, of unknown etiology.

Dr. Joseph Bank

The long 2½ page history may have had a repellent effect on some of the members tackling Case 1 after a long summer of mental lassitude. So I shall present a few highlights of the fatal illness.

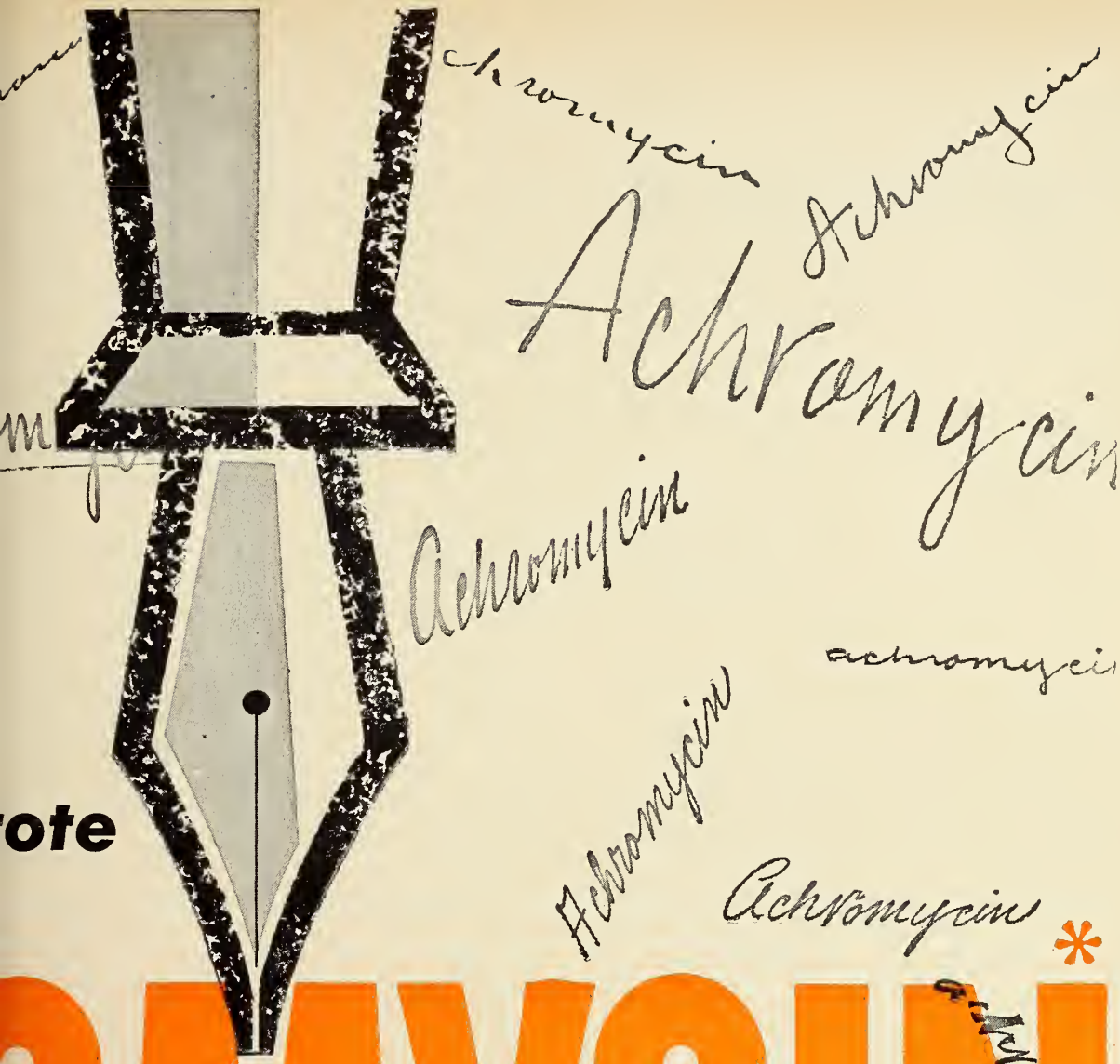
This 80 year old woman was ill about 8 months from onset to termination; 6 months before admission, 19 days during the admission, one month at home and finally a readmission of 15 days. The chief complaint was diarrhea of the steatorrhea type with lots of fat in the stool. Weight loss of 40 lbs. was present (170-130) but she regained 10 lbs. during the month prior to admission which may have been due to fluid retention

Shortly after onset of symptoms G.I. x-rays showed dilatation of the duodenum to the ligament of Treitz. The stomach and barium enema were negative. No obstruction was made out. Of significence was the presence of bilateral edema of the lower extremities, normal serum protein on admission abdominal distention, greasy stools, 3 plus soaps and split fat, normal neutral fat, normal urine, moderate anemia, normal N P N, blood sugar, moderate reduction protein with normal albumin globulin ratio, normal serum amylase, lipase and van den Bergh, cephalin floccuation, bromsulfalein, glucose tolerance. The prothrombin 24 (normal 20).

It is apparent from the story this far that we are dealing with a problem of pancreatic insufficiency due to long standing disease such as pancreatic lithiasis, recurrent acute pancreatitis, fibrosis or tumor. As a result of the absence of enzymes such as trypsin, lipase and amylase, there results; (1) fecal wastage of fat, (2) fecal

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wastage of vitamins, (3) fecal wastage of nitrogen and (4) incomplete utilization of carbohydrate.

Excessive loss of fat known as steatorrhea is the first to appear. The stools become copious, foamy, soapy and foul. Total fecal fat may reach as high as 80% of the dry weight of the stool. It should be more than 40% before steatorrhea can be said to be present. With this faulty obsorption of fat there occurs weight loss and disappearance of subcutaneous fat. An increased amount of fat in the liver may occur. This is due partly to the loss of pontreatic lipotropic factors and partly to pituitary ketogenic hormone which is called forth to combat malnutrition by increasing transportation of fat to the liver from the peripheral depots.

The loss of fat soluoble vitamins in the feces is far more important than the loss of fat. The clinical levels of Vitamin A and carotene are low and signs of deficiency may be present. The failure of obsorption of Vitamin D plays an important role in the excessive loss of calcium and resulting skeletsl demineralization.

Excessive loss of nitrogen in the feces results from incomplete digestion of protein associated with insufficient pancreatic trypsin in the intestines. A simple test for the presence of trypsin in the stool consists of placing a drop stool suspension on an unexposed x-ray film and incubating it for 30 minutes in the dark. If present, the trypsin will cause a digestion of the gelatine surface of the film and cause an exposure Trypsin is normally present in the stools of children but not of adults except in cases of diarrhea when there is a rapid passage of digestive juices through the intestinal tract. This test may therefore be used to differentiate between pancreatic insufficiency and diarrhea due to other causes in the adult. It is particularly useful in diagnosing pantreatic fibrosis in children Generalized muscular wasting results and hypoproteinemia may occur. Albumin and globulin are equally reduced and there is no compensatory elevation of serum cholesterol umlike most other conditions associated with hypoprotenemia. Generalized edema may occur. Edema of the intestional tract further interferes with intestinal absorption.

The disturbance of carbohydrate metabolism depends upon the degree to which the islets of Langerhans have been destroyed and upon the extent of fatty infiltration of the liver.

The symptoms of flatulence, abdominal distension and tympanites may result from faulty digestion of starch but such symptoms are more common in sprue or coeliac disease rather than primary pancreatic insufficiency.

The metabolic disturbances of idiopathic steatorrhea (sprue) resembles those of true pancreatic insufficiency. They both have excessive loss of fat, fat soluble vitamins, nitrogen, and calcium; as well as diarrhea weight loss, muscular wasting, skeletal dimineralization, hypoproteininemia and edema. In idiopathic steatorrhea, in contrast to primary pancreatic insufficiency, examination of the duodenal contents reveals the presence of pancreatic enzymes, the increase in fecal fat is greater in the fatty acids than in neutral fat. These patients are not benefitted by pancreatic enzymes.

They also commonly have a severe macrocytic anemia which responds to folic acid and in lesser degree to crude liver extract. This is not true of primary insufficiency. The oral glucose tolerance curve is flat in itiopathic steatorrhea but the intravenous curve is normal.

The most important factor in making a diagnosis of chronic pancreatitis is the finding of high serum amylese in the beginning of the attack if the disease is of recurrent type. In the chronic phases of the disorder recognition will depend on the discovery of steatorrhea or diabetes mellatus or x-ray evidence of calcification of the pancreas. The later two are absent in this case. Numerous studies have revealed that the classic picture of painless progressive jaundice is not the most common form in which carcinoma of the pancreas presents itself. Jaundice occurs in about half the cases. Upper abdominal pain with no definite pattern or constant form of radiation occurs in a higher percentage. In the absence of jaundice the diagnosis may be suggested by the x-ray demonstration of deformity in the neighboring organs by extrinsic pressure.

The absence of jaundice, pain, diabetes and x-ray evidence of tumor puts the diagnosis of carcinoma on shaky ground. But I know of no better explanation of the pancreatic deficiency in this set of circumstances than carcinoma. It it a diagnosis of exclusion. Certainly there is little evidence to suspect pancreatitis, lithiasis fibrocis or sprue.

One is puzzled by the failure of the endoscopist to do a liver biopsy during the peritoneoscopy. That might have disclosed a fatty cirrhosis which I believe this patient had. Such a cirr-

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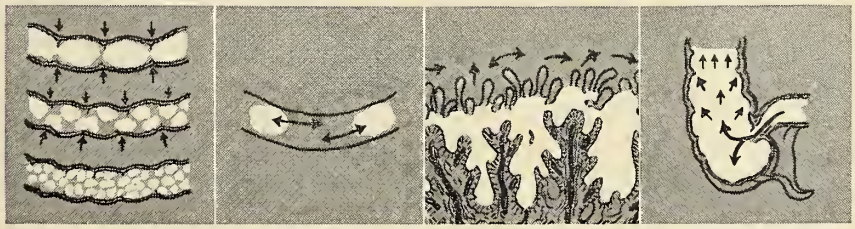
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hosis could explain the hematemesis, esophageal varices, ascites, hemorrhoids and increasing size of the liver.

The fall of the serum lipase may be due to increasing destruction of the acinar tissue. The pressure on the fundus of the stomach seen late in the disease could be due to tumor in the tail of the pancrease.

1. Ca of the body or tail of pancrease.
2. Cirrhosis of liver (fatty).

DIFFERENTIAL DIAGNOSIS

Dr. Reed Harwood; "Stool examinations showed soft, bulky, greasy stools, with a normal number of undigested muscle fibers." I wonder how many of us have actually examined enough stools to know what the normal number of muscle fibers is. Certainly much depends on the type of food the patient was eating, how well cooked it was and so forth. If this observation wac made by an expert, I should pay some attention to it.

My consultant interpreted the vitamin A tolerance test as indicating a slight impairment of absorption of vitamin A. I was told that 1 to 3 units per cc. is the normal range for carotenoids; hence they are definitely low.

Had the edema increased in the interim? Measurements of edema are rather inaccurate; they depend on how impressed the observer is.

Dr. Benjamin Castleman; I believe it had increased.

Dr. Harwood; May I see the x-ray films?

Dr. Stanley M. Wyman; I am sure it was very difficult to examine this patient adequately. The films from the first examination show a suggestion of a deformed duodenal cap. It is perhaps dangerous to suggest this in view of the fact that the fluoroscopist made no mention of it and it is not part of the official interpretation, but all the available films do show a deformed duodenal cap. The second portion of the duodenum is greatly dilated; I do not see the cause for this. The barium-enema examination was not remarkable. There is much arteriosclerosis in the aorta, which is not unusual at her age. The gastrointestinal series made about six weeks after the first series again demonstrates what to my mind is suspicious of a deformed duodenal cap and again shows a much dilated second and proximal third portion of the duodenum. I do not see a lesion to account for this, and I cannot say more than that it is dilated. I would worry about some lesion in the region of the pancreas.

Dr. Harwood; Have you an x-ray film showing the stomach being pressed on?

Dr. Wyman; The next films, taken about seven months later, show this pressure on the superior portion of the stomach. There is definite evidence of esophageal varices. There is a large amount of fluid in the abdomen and some gas in loops of bowel — without frank obstruction however. The stomach seems to be severely obstructed, and a film taken one day later shows tremendous distention of the stomach. This film of the chest shows tremendous distention of the stomach. This film of the chest shows what appears to be a soft-tissue mass indenting the trachea on its left side — apparently the enlarged thyroid.

Dr. Harwood; Are you impressed with the lung fields? Do you think they are free of disease?

Dr. Wyman; The lung fields do not seem particularly unusual for a woman of eighty; I think she had a fair degree of emphysema and fibrosis.

Dr. Harwood; At the outset I would to exclude the tumor of the breast as having anything to do with the present illness. If she had a carcinoma of the breast at that time and, if it were to recur, it would have done so before thirty years had elapsed. Another thing I am not going to pay much attention to is the thyroid gland, which was enlarged and apparently did not change during the several months that she was under observation. I expect it was a colloid goiter. I am also going to exclude sprue because the ascities would bc quite unlikely except in extreme cases of malnutrition; there was no glossitis or a macrocytic anemia, and the patient did not respond to measures that are ordinarily effective in sprue — especially the liver extract.

Bulky, greasy stools point strongly in the direction of some lesion of the pancreas or some deficiency in the external secretion of the pancreas. When the pancreatic ducts are occluded one would expect a rise in the serum amylase and serum lipase; this may indeed have happened at the onset in this case. I assume that the pancreatic ducts were occluded for the six months or more that the disease was going on and that only later in the illness were the studies of the serum atrophied somewhat and less of the amylase and lipase were being made. The determinations are not particularly helpful to me.

Home Medication . . .

The direction circular included in all packages of Bayer Aspirin has recently been published in full pages in leading national magazines reaching well over seventy-five million. Quoted below is a prominent paragraph from these directions.

IMPORTANT NOTICE!

The dosages of Bayer Aspirin recommended in these directions are appropriate for the aches and pains that may be treated by home medication. If these dosages do not bring relief and the pain persists, it is an indication that this particular pain is of a nature that requires the attention of a physician. Under these conditions, don't experiment with any other home medications. Consult your physician. He is the only one qualified to diagnose the cause of the persistent pain and prescribe the remedy best suited to your individual needs. This is particularly true of continuing severe pains of Arthritis, Rheumatism, Sciatica, Bursitis and Neuritis.

THE BAYER COMPANY DIVISION
OF STERLING DRUG INC.
1450 BROADWAY, NEW YORK 18, N. Y.

Could this patient have had acute pancreatitis? The absence of an acute onset, with pain and fever, leads me to exclude such a diagnosis. She had a chronically downhill course. Chronic pancreatitis can produce symptoms such as fatty diarrhea. However, the absence of episodes of pain and fever makes this diagnosis unlikely. Pancreatic lithiasis also can produce fatty stools, but no stone was noted and the characteristic pain was not present. Hemochromatosis will infrequently produce fatty stools. I think we can exclude hemochromatosis because of the absence of glycosuria and pigmentation. The liver became enlarged only late in the illness, and ascites and hemorrhage are rare in hemochromatosis, although they do occasionally occur.

Tuberculosis occasionally affects the panereas; it too can produce fatty stools. In this case there was a negative tuberculin test and negative guinea-pig inoculation. I am a little bothered by the inflammatory nodules on the peritoneum, but the nodules showed no specific inflammation. I think I can safely exclude tuberculosis.

Then I come to tumors of the pancreas. Occasionally a benign tumor will obstruct the pancreatic duct and produce a picture much like the early stage of this patient's illness. A patient with just such a lesion was recently presented at Grand Rounds in this hospital. Much more common, of course, are the malignant tumors. It is usually said that 85 per cent of the malignant tumors of the pancreas cause pain, which this patient did not have. Sixty per cent or more cause jaundice. Ten per cent are recorded as producing definite interference with the external secretion of the pancreas, with fatty stools and diarrhea. Cancer of the pancreas may metastasize to the liver, lungs and local lymph nodes and may cause pressure on such structures as the portal vein and the vena cava. It should be emphasized that there is a strong tendency to spontaneous thromboses of various veins in pancreatic carcinoma.

The liver, which was also involved in this case, was normal early in the disease. No esophageal varices were noted and the liver-function tests were within normal range. Later on the patient developed ascities, pain in the region of the spleen, enlargement of the liver and spleen, esophageal varices, hematemesis — all of these coming on fairly suddenly suggested to me a rather sudden interference with the portal circulation, possibly extension of the tumor or a metastasis to the lumen of the portal vein. The endema of the legs that occurred during the illness could have been due to phlebothrombosis in the leg or pelvic veins, to the ascites itself or to the thrombosis of the inferior vena cava. The lungs do not show the metastases that are frequently present in carcinoma of the pancreas.

The findings in the gastrointestinal series are quite suggestive of a lesion in the region of the pancreas interfering with the passage of berium through the duodenal loop. I am a little disturbed by Dr. Wyman's report of a constant deformity of the tip of the duodenal cap. If the tumor extended that far originally, I would also expect jaundice. I cannot explain why jaundice was not present in this case. I am a little disturbed also by the negative biopsy report of the peritoneoscopy, if there were nodules there. I assume that it might be quite difficult to pick up a 1-mm. nodule and be sure that no one had it. It would not surprise me if Dr. Castleman said that there were metastatic nodules of pancreatic careinoma on the peritoneal wall.

Dr. Edward B. Benedict; I would like to make a comment about the peritoneoscopy. Actually, we have been very successful in obtaining biopsy specimens that showed carcinoma or tuberculosis when either was present. In a few cases of pancreatitis that we have examined by peritoneoscopy we have received a report of fat necrosis, which more or less clinched the diagnosis. I did not perform the peritoneoscopy in this patient; Dr. Serrano did. His preoperative diagnosis was tuberculosis or carcinoma.

Dr. Gustav R. Serrano; I cannot add much to what is in the record. There were only a few nodules, each not more than 3 mm. in diameter, one of which I am sure we got.

Dr. Castleman; Dr. Ellis, you saw this patient; have you any comment?

Dr. Daniel S. Ellis: I have been trying to remember her, but I am just as much in the dark as Dr. Harwood is at this point. I think I would have arrived at the same conclusion. It is possible that the patient could have had all this on the basis of cirrhosis, but I thing that is unlikely in view of that peritoneoscopy. I believe that she probably did have carcinoma of the pancreas with enough involvement of the portal system to give her portal vein block, varices and bleeding and that the liver enlargement was due to metastases or congestion.

CLINICAL DIAGNOSIS

? Carcinoma of body of pancreas.

Diffuse carcinomatosis.

DR. HARWOOD'S DIAGNOSIS

Carcinoma of the pancreas, with involvement of portal vein and vena cava and with metastases to peritoneum.

Ascities.

Esophageal varices.

Splenomegaly.

ANATOMICAL DIAGNOSIS

Scirrhous adenocarcinoma of pancreas, with pyloric, duodenal transverse colon, portal vein and inferior vena cava obstruction and with metastases to regional retroperitoneal lymph nodes.

Esophageal varices with gastrointestinal hemorrhage, marked.

Hemorrhoidal varices.

Ascites.

Dilatation of stomach, marked.

PATHOLOGICAL DISCUSSION

Dr. Castleman; Dr. Carlos Tejada, who performed this autopsy, has put a drawing of his findings on the board. At the time of autopsy the abdominal cavity contained about 2 liters of clear straw-colored fluid. We could find no peritoneal nodules and no evidence of metastases. The striking finding concerned the stomach, which was tremendously distended and filled with over 6 liters of brownish-black turbid fluid. When this stomach was turned back, the gall bladder looked pretty normal. There was a huge mass — 20cm. in diameter, — in the retroperitoneal area that involved not only the head of the pancreas but the entire pancreas. The mass invaded the wall of the stomach at the pylorus, producing a narrowing there and another narrowing in the duodenum. It also pressed against the transverse colon, but nowhere did it invade the mucosa of the gastrointestinal tract. It almost completely occluded the splenic and portal vein, although we were able to pass a very narrow probe through the lumen, but there was no thrombosis. There certainly was enough compression of the portal vein to produce the enlarged spleen and the varices of the esophagus. One of the varices had ruptured and was the source of the dark-brown fluid found in the stomach and of the tarry stools we found below. The tumor also involved the inferior vena cava, producing considerable narrowing, which accounted for the marked peripheral edema.

At the time of autopsy there was no evidence of tumor anywhere else in the body, except in a few regional nodes along the pancreas. The cut section of the tumor was so hard and fibrous that we thought that it was possibly a fibroarcoma of the pancreas. Although the common bile duct in the pancreas was narrowed, pressure on the gall bladder allowed bile to come through into the duodenum — evidence for the absence of jaundice. This also led me to believe it was not the usual sort of carcinoma of the pancreas, which would ordinarily produce jaundice with this degree of bile-duct narrowing.

Microscopically, most of the tumor was composed of dense fibrous tissue, in which was an occasional glandular, space, usually perineurial in location. The large regional lymph nodes showed an obvious adenocarcinoma. Thus we have a highly scirrhous adenocarcinoma that has been growing very slowly. In many fields one had to hunt to find tumor cells. So much of the tumor was within nerve sheaths that it is amazing that the patient had no pain. We often think that the involvement of nerves by carcinoma so often seen in carcinoma of the pancreas and the prostate is the cause of pain. If that was so, surely this patient should have had excruciating pain.

Dr. Earle M. Chapman; What did the thyroid show?

Dr. Castleman; A Colloid goiter. The liver was quite normal.

Dr. Ellis; The protocol said it was enlarged, tender and 4 finger-breadths below the costal margin.

Dr. Castleman; If weighed only 1200 gm. — rather smaller than usual. I wonder if the examiners were feeling the tumor mass, rather than the liver.

Dr. Ellis; If the liver was pushed up under the diaphragm, the physicians may have been feeling the dilated stomach.

"A look at the morbidity among physicians, makes valid this advice — take a vacation and hang up your sign:

"GONE FISHING"

Harry E. Thompson, M. D.
President, Arizona
Medical Association

Editorial

ARIZONA MEDICINE
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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the OURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

GUEST EDITORIAL
TELEPHONE CONSULTATIONS

SOME time ago a plan to provide telephone consultations for doctors practicing in the rural areas was considered by the Association. Such a plan, it seems, would be of inestimable value to us physicians located in the "sticks."

Such a service would not have to be used excessively, nor to the point of being a burden to those involved. However, occasionally medical situations arise that make such consultations mandatory. This is especially true of accident cases, but there are also other situations (coronary occlusions, etc.) wherein the patient cannot be moved, and it is difficult, or at least most inconvenient, to bring the consultant to the patient.

Actually, we now get such consultations by imposing upon our specialist friends. These friends always respond willingly, but perhaps they would feel better if the furnishing of the service were delegated to a definite organization established by the Association for that specific purpose.

A telephone consultation system, efficiently organized and operated, would have many advantages. First, and of course most important, it would make possible the giving to the patient the very best possible care. Second, it would relieve the isolated physician of considerable anxiety and, at times, of downright mental anguish! It would also be of considerable value in reassuring the relatives of the acutely ill or severely injured patient.

I, for one, believe that a system of telephone consultation service would be a decided asset and should be established.

Ellis V. Browning, M.D.
Springerville, Arizona

LETTERS TO EDITOR

Adrian H. Scolten, M.D.
Diseases of the Skin & Allergy
32 Deering St.
Portland, Maine

Dear Editor of Arizona Medicine:

RE: Social Security for Physicians

"For twenty-five years as an interested observer I have attended the meetings of the AMA House of Delegates. Therefore a group of New England doctors who want the AMA membership to get Social Security on a volunteer basis, have asked me to do what I can to bring this about.

This past year clergymen were included in this coverage. I have two brothers and two brothers in law who are clergymen and I know what a God-send this will be to them and to their families. It will be just as much of a God-send to the countless physicians all over this country who have no large incomes, who have given a life time of unselfish service to humanity. These doctors have never been surgeons with

large incomes but with many of them the good they have done, only the angels know. They should not be penalized because of membership in the only profession left out of this bill, not included under Social Security coverage.

In 1954 a survey was made by Medical Economics which showed that 54% of the doctors of this country were in favor of it. Letters sent out by me and replies recently received show that better than 65% of the New York doctors polled want to be included, and 59% of the Arizona doctors.

Please let me hear from you and write to or in some way contact your Senators and Congressmen.

Sincerely,
Adrian H. Scolten.

P.S. In 1948, with no financial help whetever, I ran for the U.S. Senate against Margaret Chase Smith and got 65,000 votes. This year the Democratic Party of Maine elected a governor on the foundation that I helped to build.

ARIZONA ACADEMY OF GENERAL PRACTICE

On June 25th, the Board of Directors met in Tucson. Most of the meeting was taken up by the Committee on the Revision of the Constitution and By-Laws and, as soon as the committee as a whole approves the draft, we are going to mimeograph the Constitution and By-Laws and send them to each member for his perusal.

We plan to have a special meeting of the Academy on the night of Nov. 9th, in conjunction with the Symposium on Epilepsy, to be held at the Westward Ho in Phoenix. The Arizona Academy of General Practice is co-sponsoring the first day of this meeting. Incidentally, this meeting will count for formal credits.

At a later date, probably during the Annual Meeting to be held in February, here in Tucson, the final action will be taken on the Revision of the Constitution and By-Laws.

The Arizona Academy of General Practice is planning to sponsor a speaker at the 1956 meeting of the Arizona Medical Association. At the present time, we do have letters out to the National Headquarters attempting to get a well-qualified speaker to speak at both the Scientific Session and also to the Academy at its Annual Luncheon.

The 1956 convention for the Arizona Academy is to be held in Tucson. The speakers are being subsidized by Wyeth Laboratories and for the first time since the formation of the Arizona Academy we are going to have scientific exhibitors. At the present time, we are unable to say how many of the companies will be willing to exhibit, but we hope that it will be in the neighborhood of ten. The Santa Rita Hotel in Tucson is going to be headquarter's hotel and they have been very gracious in their accommodations. The present plans call for the scientific exhibits to be in the main lobby, so that not only the members in attendance, but the general public as well, will be cognizant of the drugs offered. Because of the generosity of Wyeth Laboratories, they are being given the most prominent spot in the floor demonstration.

Our membership has continued to grow. I am unable at this time to give you exact figures, but it is in excess of 90. Many members are being enrolled from the Phoenix area at this time. In Tucson there are still a few people in General Practice who are not members of our organization, but whom, we trust, will soon join our ranks.

As a matter of general information, the Interstate Post-Graduate Medical Association of North America will hold its 40th annual postgraduate assembly in Milwaukee, Wisconsin, on Nov. 14-17. This again will be formal credit hours.

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

IT SHOULDN'T be long until us uncultered writers are relegated to the limbo (not that we haven't been OUT on one for a long time) . . . The accomplishments of the AMERICAN MEDICAL WRITER'S ASSOCIATION have recently been listed in a booklet. Their super-qualification of which we are most jealous is the "4-year collegiate course in medical journalism and writing". It can be had, since September 1954, at the Universities of Illinois, Missouri, and Oklahoma. . . . Since quite a few of us can't take time off for a course, you'll have to wait until a few degrees filter down/up to this level.

The world's RICHEST SOURCE OF VITAMIN C has begun to produce its usual four crops a year in Puerto Rico. It is the West Indian cherry, or acerola. . . . A six-ounce glass contains as much vitamin C as 85 glasses of orange juice, or 8,650 milligrams. The fruit is like a small crabapple, and has a "tart and refreshing" taste. . . . It will be available commercially, and arrangements were started at the urging of Dr. J. R. Wilson, director of the AMA Council on Foods and Nutrition.

The publicity which followed the advent of socialized medicine in England has subsided, and less is heard of the quality of medicine and the plight of physicians in that country. . . . Now we have the same stories from SWEDEN, which has been engaged in the same process and with the same results. . . . 'Medical Economics' quotes Dr. Dag Knutson, president of the Swedish Medical Association, "We doctors aren't happy about the program. On the contrary, we are distressed by it. More than that, we're skeptical as to its results". . . . The compulsory health insurance law went into effect in January 1955.

The medical society councils which are now taking a whack at the SALK ANTIPOLIO VACCINE, and at its method of announcement, look somewhat pompous to the common people. . . . They may be technically and ethically right, but any criticism which is so obviously hindsight is itself vulnerable.

A few THYROID ITEMS OF INTEREST were reported at the American Academy of General Practice meetings. E. P. McCullagh of the Cleveland Clinic stated that at least 10% of the hyperthyroid patients treated with the radioisotope I^{131} became permanently hypothyroid. . . . Acute thyroiditis is best treated with cortisone. . . . Desiccated thyroid is of value in deficiency diseases, and may be of some value in pituitary failure, Addison's disease, and habitual aborters, but it is of little or no value in pure menopausal complaints, obesity, dermatologic conditions, arteriosclerotic heart disease, and sterility.

L. K. Diamond of Boston (the erythroblastosis expert) told the New Orleans Graduate Medical Assembly of the waning place which SPLENECTOMY has in THROMBOCYTOPENIC PURPURA. Less than 10 per cent need it. . . . Adrenal cortical steroids and platelet transfusions usually do the job.

The x-rays which show a successful AORTOGRAM are a startling sight to those of us who can't always get a short needle into an arm vein. They beautifully demonstrate abdominal aneurysms, sclerotic stenoses, and other nearby arterial abnormalities, and it surely makes possible some fabulous operations.

The Aero Medical Assocatiion was told by Strughold of Randolph AFB, Texas, that 'SPACE TRAVEL' is possible as far as the vehicle's cabin is concerned. . . . The pressurized cabins of today's planes can not go beyond 80.000 feet from the earth, but a SEALED CHAMBER has been available since 1954. It is not limited, and contains a closed system for balance of humidity, temperature, oxygen, CO_2, odors, etc. It is now being used as a training device.

The Kveim test for SARCOIDOSIS as thought to be almost 100% specific by such workers as Bloch. . . . Sones of Philadelphia now says that only 26.8% of proved cases responded, and false positives were just as common. . . . This reminds us of the story which described how Dr. Bloch got all of his antigen for several years from the prolific cervical glands of one patient. . . . Perhaps antigen, methods, diagnosis, et. al., have something to do with the differences in results.

The later results of 'Miltown', A NEW SEDATIVE AND SOPORIFIC DRUG, should be awaited with interest. It is said to produce a natural relaxed sleep, and its chief indications are the common anxiety and other tension states. . . . The chief questions to be answered are whether the good results will still be as high as 75%, and whether the toxicity ('rare allergy with fever or urticaria') will be as uncommon.

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X-RAYING the chests of ADMISSIONS TO GENERAL HOSPITALS has been a favorite topic of this author, this column, and this journal for quite a few years. . . . We are especially interested in use of the method in Arizona. There was no such procedure here in 1944, and it was just getting started when a national summary was made in 1948. . . . Five years later (1953) another list was made by 'HOSPITALS' Magazine, and is now available from the Nat'. TB Ass'n. Arizona has a good start, tho we'll bet that the percent of 'takes' is far from "routine" in any hospital on the list. It's like that all over. . . . The list includes the Navajo Medical Center in Fort Defiance, the McNary Hospital, Morenci Hospital, Colorado River Hospital at Parker, the Maricopa County, the Medical Center and St. Joseph's at Phoenix, the Community at Prescott, the Pima Indian at Sacaton, the General at Tombstone, St. Mary's, San Xavier, and the Medical Center in Tucson, the Fort Yuma Indian Hospital and the County General at Yuma, and the Williams Hospital. . . . There are probably a few more by now. Here's a big hand to the lay people and Boards and administrators and doctors who have wangled the start of each program. Here's hope that you can arrange for 100% routineness.

If you have funds enough to gold-plate the plumbing fixtures in your hospital we can suggest a better use for the money. . . . The Colson Corporation makes an AUTOMATIC BLOOD PRESSURE RECORDER which could be wonderfully helpful. It is about the size of a cash register, is mobile, and will register blood-pressure readings on a running paper at intervals of 30 seconds to one hour. . . . Finally it will summon a nurse by bell, light or buzzer if the pressure goes beyond set levels. The advantage in post-surgicals, for a record in chemotherapy, etc., could be tremendous.

Dr. Alvarez chooses some interesting topics, and is a most versatile man, but he finally has belittled a method in a way which we think is less right than wrong. . . . He says that he rarely asks for a GASTRIC analysis for acidity; he rarely relies on it, and he says it is often a snare and delusion. . . . If he simply wants to make a point, well and good. If he wants to eliminate the procedure, he would seem to have gone too far. . . . Possibly the exception which he quotes (pernicious anemia) suggests a certain amount of tolerance, but it seems that he quotes exceptional cases of ulcer and carcinoma instead of percentages.

MALARIA is only an occasional problem in Arizona, with a few cases arising in Mexico and a few arriving at VA hospitals. . . . Interesting tho, from any standpoint — air-travel, 'tourism', far-flung military posts, et al. . . . Hall and Latts of the Minneapolis VA Hospital have compared the currently approved dual treatments in ACUTE VIVAX MALARIA (from Korea). .This contrasts the use of chloraquine-pentaquine versus pentaquine-quinine. . . . The combined chloro-penta routine controls the fever and parisitemia more rapidly than the penta-quin. .Relapses occurred in 83% of the combination containing chloroquine, in only 32% of the penta-quin. Complications occurred in only 4 or 5% of either group. . . . (These routines do not include any data on prophylaxis, or for other types of malaria, or for recurrent disease).

The thin veil of anonymity which is provided by a pseudonym (such as 'Guillermo Osler') was quite definitely pulled aside at the Arizona Medical Society meeting. . . . I hope it will make no difference, and intend to proceed as tho Oatway and Osler were not acquainted (tho seven years is long enough so that we should at least be speaking to each other by now).

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IN MEMORIAM

Fred W. Holmes, M.D.

WHEREAS, our Society, in common with the people of this community was shocked at the tragic death of our fellow member, Doctor Fred W. Holmes, and

WHEREAS, Doctor Holmes had earned an excellent professional reputation and became a highly respected member of this community during the six years of his medical practice in Phoenix, and

WHEREAS, as a physician he maintained the highest ethical standards of the medical profession, making himself respected and highly regarded for his conscientious devotion to the practice of medicine, and

WHEREAS, in recognition of his participation in the activities of this Society and his ready acceptance of community responsibilities,

NOW THEREFORE, do we, the members of the Maricopa County Medical Society resolve that this Society spread upon its minutes and make known to the family of Fred W. Holmes its enduring respect of his personal character and professional proficiency, its deep sense of grief at his untimely death.

* * * *

IN MEMORIAM

Fred G. Holmes, M.D.

WHEREAS, our Society was deeply grieved by the loss of Doctor Fred G. Holmes, and

WHEREAS, Doctor Holmes had earned an excellent professional reputation in his twenty-nine years of medical practice, and

WHEREAS, during the years of his practice and following his retirement he freely gave much of his time to the betterment of race relations and to the service of youth,

NOW THEREFORE, do we, the members of the Maricopa County Medical Society, hereby resolve that this Society spread upon its minutes and make known to the family of Fred G. Holmes its deep sense of grief at his tragic loss.

* * * *

Adopted by unanimous vote of the Board of Directors of Maricopa County Medical Society, August 23, 1955.

Interesting Topics

HAVE YOU READ????

? X-RAY VISUALIZATION OF THE PLACENTA, by H. G. Watson, of San Francisco in Western Journ. of Surg., Obs. and Gyn., March, 1955? Describes the soft tissue technique.

? The Medical Progress review on CLINICAL PULMONARY PHYSIOLOGY, in the New Eng. Journ. of Med., Feb. 10 and 17, 1955? Review made by Edward A. Gaensler.

? Article on CYTOLOGY, ITS PRACTICAL APPLICATION IN GYNECOLOGIC DIAGNOSIS, by H. A. Grimm, Chicago, in Ill. Med. Journ., Jan., 1955? An excellent summary of the procedure and its application.

? INDUSTRIAL ASTHMA AND BRONCHITIS, by G. H. W. Schepers, Director, The Saranac Laboratory, in Industrial Med. & Surg., Feb., 1955? A very able summary with a comprehensive bibliography.

? PRESENT DAY TREATMENT OF MAMMARY CARCINOMA IN THE FEMALE, by F. Henry Ellis, Jr., The Journal-Lancet, January, 1955? Good reading.

? SYMPOSIUM ON ARTHRITIS AND RHEUMATISM, in The Journ. of the Michigan State Med. Soc., for March, 1955? Twelve article, including a 1954 review on Rheumatology. A good chance to review many phases of this subject.

? CHRONIC VASOMOTOR RHINITIS, article by John B. Gregg of Iowa City, in The South Dak. Journ. of Med., March, 1955?

? Article on MECHANICAL BASIS OF LOW BACK PAIN, by T. J. Bender, Jr., in Journ. of the Med. Assn. of Alabama, March, 1955?

? SOME COMMON SENSE CONCEPTS IN THE MANAGEMENT OF ACNE VULGARIS, by Elmer R. Gross, Del. State Med. Journ., January, 1955?

The article by Bonica and Backup, in Northwest Medicine, January, 1955, on CONTROL OF CANCER PAIN? They discuss surgical methods briefly.

The article by Dillon and Majnarich on RHEUMATOID ARTHRITIS, in the January, 1955 issue of Northwest Medicine? It is a review of the diagnosis and treatment in a very readable synopsis. Also the second article by same authors on Specific Therapy in the February issue of same journal.

The article by Atlee B. Hendricks on PERIARTERITIS NODOSA and its Protean Manifestations, in The Journ. of the Iowa State Med. Soc. for February, 1955? Three illustrative cases of the protein manifestations.

The article by R. S. Illingworth, M.D., F.R.C.P., O.P.H., D.C.H., Professor of Child Health, Univ. of Sheffield, Sheffield, Eng., in British Med. Journ. of Jan. 8, 1955, on CRYING IN INFANTS AND CHILDREN. An excellent clinical discussion of a very common phenomenon.

The article on REMOVAL OF COSMETIC DEFECTS BY DERMABRASIVE SURGERY, by Murray M. Robinson, Washington, D.C., in Medical Annals of the Dist. of Columbia, January, 1955. An excellent article on a somewhat controversial topic.

The article on ADRENALECTOMY FOR BREAST CANCER, in British Med. Journ. for Jan. 1, 1955, by Sir Stanford Cade, K.B.E., C.B., F.R.C.S., F.R.C.O.G., M.R.C.P., Senior Surgeon of Westminster Hospital, London, Eng. An authoritative on a much talked of procedure.

The article on ANAL PRURITUS, in Minnesota Medicine, January, 1955, by Howard M. Frykman, of Minneapolis.

The article on PULMONARY HISTOPLASMOSIS, in The Journ. of the Louisiana State. Med. Soc., January, 1955, written by John W. Middleton, of Galveston, Texas. Nicely illustrated by x-ray productions and three case reports.

The article describing the value of THE PLAIN FILM OF THE ABDOMEN, in The Journ. of the Med. Assn. of Alabama, written by Kirk R. Deibert, of Florence, Ala. Short and to the point.

The refresher course review on ACUTE LUMBAGO AND SCIATICA, in the British Med. Journ. Feb. 5 1955 prepared by John Charnley M.B., B.Sc., F.R.S.C. Orthopedic Surgeon of the Manchester Royal Infirmary.

The article on POST-CHOLECYSTECTOMY SYNDROME, written by Hodge and Hodge, Spartanburg, S.C., in the Journ. of South Carolina Med. Assn., for February, 1955.

The article on SATISFACTORY MANAGEMENT OF VASOMOTOR RHINITIS, in the Journ. of the Arkansas Medical Society, written by H. A. Baiiley. Advocates submucosal electrocoagulation, of the turbinates.

The article on BENIGN BREAST TUMORS, by Selecman and McCall, of Dallas, Texas, in the Texas State Journ. of Med., for November, 1954. An easy simple classification.

The artcile by Vincent P. Collins, of Houston, Texas, on McWHIRTER TECHNIC FOR TREATMENT OF BREAST CANCER — an Appraisal, in Texas State Journ. of Med., November, 1954. This is the technic of simple mastectomy followed by radiotherapy.

The article on RADIATION THERAPY IN THE MANAGEMENT OF THE LYMPHOMAS, Simeon T. Cantril of Seattle, Wash., in Texas State Journ. of Med., for November, 1954. A well illustrated discussion.

RULES OF THE JUDICIAL COUNCIL AMERICAN MEDICAL ASSOCIATION

The Judicial Council

The first permanent judicial body of the American Medical Association, the Committee on Ethics, was appointed in 1858. In 1873 that Committee was replaced by the Judicial Council which has, since that time, been the court of last resort of the Association. The Council consists of five members, elected by the House of Delegates on nomination of the President for terms of five years. Its jurisdiction, defined by the Constitution and Bylaws, includes consideration of (1) ethical and constitutional controversies, (2) questions relating to membership and (3) disputes arising between members or members and their medical societies.

RULES OF THE JUDICIAL COUNCIL ADOPTED OCTOBER 1, 1954

Rule I. Administration.

A. **Meetings.** The Judicial Council will meet during the Annual and Clinical Sessions of the American Medical Association. Other meetings of the Council may be called on reasonable notice, by the Chairman of the Council; or they shall be called, on reasonable notice, by the Secretary of the American Medical Association on the written request of at least three members of the Council.

B. **Chairman.** The Judicial Council shall elect from among its members a chairman and vice-chairman each year at the meeting of the Council held during the Annual Session of the Association. Each shall retain the right to vote on all matters.

C. **Quorum.** Three members of the Judicial Council shall constitute a quorum but a majority vote of the entire Council shall be required to adopt any action.

Rule II. Applications for Membership.

A. **Active, Associate and Service Membership.** Applications for active, associate or service membership in the American Medical Association will be considered by the Judicial Council at any meeting upon presentation of the applications by the Secretary of the Association.

B. **Affiliate Membership.** Applications for affiliate membership submitted by physicians who are members of the chartered national medical societies of foreign countries adjacent to the United States or by American physicians who are located in foreign countries and engaged in medical missionary and similar educational and philanthropic labors will be considered at any meeting of the Judicial Council on presentation of the applications by the Secretary of the Association. The Council will consider and approve only those applications which are accompanied by a statement of a responsible and qualified individual attesting to the above set forth requirements.

C. **Refusal of Approval.** An applicant for membership in the American Medical Association whose application has not been approved by the Judicial Council will be promptly notified of such fact, and will be given twenty days within which to request reconsideration of his application in accord with the provisions of Rule III.

Rule III. Reconsideration of Applications for Membership.

A request for reconsideration of a refusal to approve an application for membership should be initiated by a written statement setting forth the reasons for reconsideration.

Rule IV. Original Controversies.

Original proceedings before the Judicial Council shall be initiated by a written statement. Such statement shall include information (1) identifying the parties to the controversy, including membership affiliations, if applicable, and (2) explaining the nature of the controversy, setting forth the provisions of the Constitution, Bylaws, Rules or Principles of Medical Ethics concerned.

Rule V. Appeals.

Appellate proceedings before the Judicial Council shall be initiated by a written statement of appeal. Such statement shall include information (1) identifying the parties to the case and indicating membership affiliations when appropriate, (2) showing that the appellant has exhausted remedies made available by the constitution and bylaws of the component society and the constituent association and, (3) describing the error of law or procedure which is believed to have occurred during the proceedings. The statement shall also include a concise, factual resume of the case. Appellant shall submit with the statement the charges, complaints, findings, opinions and decisions previously entered in the case.

RULE IV. Interpretation of the Constitution, By-Laws, Rules and Principles of Medical Ethics of the American Medical Association.

A. **Requests for Interpretation.** Requests for

interpretation of the Constitution, Bylaws, Rules or principles of Medical Ethics of the Association shall be in writing and shall describe the matter to be interpreted in sufficient detail to enable the members of the Judicial Council to evaluate the request in all its aspects.

B. **Interpretations Initiated by the Council.** The Judicial Council, on its own motion, may render an opinion concerning the interpretation or application of the Constitution, Bylaws, Rules or Principles of Medical Ethics of the Association and may, on its own motion, consider and decide the constitutionality and validity of all rules and regulations adopted by Councils and Committees of the Association pursuant to the Bylaws of the Association.

C. **Discretionary Power.** The Judicial Council may, in its discretion, refuse to consider requests for interpretation of the Principles of Medical Ethics which in the opinion of the Council should be resolved by a component society or a constituent association. Requests for interpretation of the Principles of Medical Ethics which are not of national interest and relate to the observance of local customs and ideals may be readdressed to the component society or constituent association primarily responsible for knowledge of the requirements of such local customs and recognized ideals.

Rule VII. Jurisdiction.

The Judicial Council may, on its own motion or on the motion of any party, determine the question of jurisdiction at any stage of the proceedings.

Rule VIII. Additional Statements and Record.

After a statement has been submitted to the Judicial Council with the intention of initiating an action, all other parties in interest shall have the right to submit a statement on their behalf. Such statements shall be filed within thirty days after the filing of the initiating statement unless additional time is granted by the Council.

The Judicial Council may thereafter require the parties to submit such transcripts of testimony, records, written statements supporting their contentions or other material as the Council may deem necessary.

Rule IX. Hearings.

A. **Notice of Hearings.** The Council may, in its discretion, determine whether a hearing is necessary or advisable. The Council will designate the time and place for all hearings, giving reasonable notice thereof to all parties.

B. **Attendance.** The attendance at hearings



may be limited to the members of the Judicial Council, the staff, witnesses, if any, the parties and counsel, who may speak in their behalf. Should any party to the controversy fail to appear, the Council may, in its discretion, continue, dismiss or decide the matter.

C. **Evidence and Argument.** The Judicial Council will not be bound by technical rulings of evidence usually employed in legal proceedings but may accept any evidence it deems appropriate and pertinent.

In any appeal case the review, if any, of the evidence will be limited to the evidence presented to the procedings before the component society and constituent association or appropriate committee, board, or group thereof; provided, however, that in the event the Council is of the opinion such evidence is inadequate to determine the question of law or procedure presented, the Council, on its own motion or on the suggestion of any party, may require the production of additional evidence before the Council or refer the matter to the appropriate body for additional evidence.

In matters other than appeal cases, the Judicial Council will grant the parties the right to present evidence to the extent the Council believes appropriate to the particular matter in controversy.

In all hearings, the Council, within reasonable limitations, will allow oral argument.

D. **Record.** In hearings of original controversies, appeals and in other proceedings a transcript may be made at the discretion of the Council.

Rule X. Opinions.

All opinions or decisions of the Judicial Council shall be in writing. Copies of the opinion or decision and the dissent, if any, will be filed as a part of the record and furnished to all the parties involved.

Rule XI. Filing and Copies.

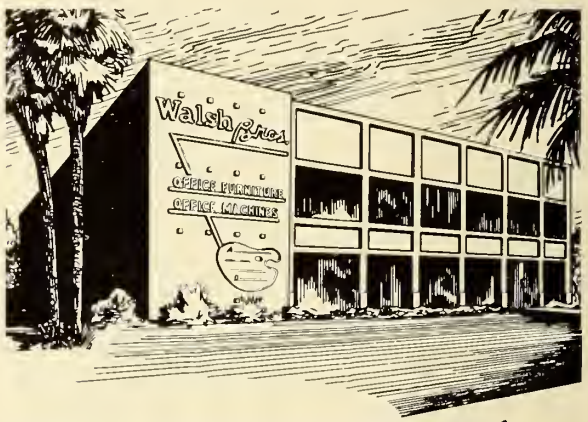
Eight copies of all documents shall be submitted to the Executive Secretary of the Judicial Council. One copy of each document shall be submitted at the same time to each of the other parties to the controversy.

PRESENT JUDICIAL COUNCIL

Homer L. Pearson Jr., Miami, Fla., chairman
Louis A. Buie, Rochester, Minn.
Walter F. Donaldson, Bakerstown, Pa.
J. Morrison Hutcheson, Richard, Va.
George A. Woodhouse, Pleasant Hill, Ohio
ex-officio
George F. Lull, Chicago, secretary
Ernest B. Howard, Chicago
Austin Smith, Chicago
E. J. Holman, Chicago, executive secretary

MEETING NOTICE

SAN DIEGO Postgraduate Assembly, San Diego County Hospital, San Diego, California, September 21, 22. Dr. Howard B. Kirtland Jr., 3505 Fourth Avenue, San Diego 3, California.



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Notes from the EDITORS PEN

DOCTOR DRAFT EXTENSION

ON June 16th the U. S. Senate voted to extend the draft act which included extension to the Doctor Draft Act. As you will recall the latter Doctor Draft Act was enacted, with the full support of the American Medical Association, to meet the Korean war emergency. There is no manpower emergency now. Yet the Defense Department is determined to keep this discriminatory law on the books.

For your information, following are the facts as documented repeatedly in testimony before Congressional Committees and in representations to the Department of Defense:

1. The basic trouble is the refusal of the Defense Department to develop stable, long-range plans that would make military medicine appealing to physicians as a life work. As long as the Defense Department can freely call up what doctors it wants, it will not bother to improve the career-appeal of military medicine and we may expect an indefinite series of extensions in the future.

2. Without the Doctor Draft there will be no shortage of physicians for general military duty. They will be supplied by the regular draft — to which the AMA does not in any way object.

3. Without the Doctor Draft there will be no shortage of specialists, if the military services will do three things: First, start immediately to make military medicine more attractive as a career so as to retain experienced medical officers. Second, employ civilian resources to care for service families and civilian employees. Third, make more efficient and economical use of physicians now in uniform.

The Senate in voting to extend the Doctor Draft Act, accepted the Defense Department's argument of expediency.

When this draft extension act reached the House of Representatives, your Legislation Committee took immediate action urging our U. S. Representatives to support an amendment to the doctor draft law which would provide "standby authority" only. This would make such discriminatory legislation as the doctor draft act inoperative excepting upon declaration of an emergency.

The Conference Report on H. R. 3005, which contained the Doctor Draft Extension was considered on the floor of the House of Representatives on June 28th. Although the Conference Report was passed overwhelmingly 388 to 5, the most important vote was that to recommit the report to the Conference Committee. On this vote, the question at issue was whether or not the Doctor Draft would be considered separate from the regular draft. The vote was 171 for recommittal and 221 against. The American Medical Association was for recommittal. For the record and your information, be advised that Arizona's Representatives voted: Udall (D) for recommittal; Rhodes (R) against recommittal.

Two changes are made by the law extending the act. It no longer applies to men over 46 years of age, nor to those 35 and over who at any time have been rejected for a military commission as a physician or dentist in one of the Armed Forces solely on the grounds of their physical condition. The law now reads: "No person in the medical, dental, and allied specialist categories shall be inducted under the provisions of this subjection: (A) after he has attained the thirty-fifth anniversary of the date of his birth, if he applies or has applied for a commission in one of the Armed Forces in any of such categories and is or has been rejected for such commission on the sole grounds of a physical disqualification, or (B) after he has obtained the forty-sixth anniversary of the date of his birth.

INDIAN MEDICAL RESPONSIBILITY

Effective July 1, 1955, the U. S. Public Health Service takes over responsibility for the medical care of American Indians, a duty that up to then has been performed by the Indian Bureau in the Dept. of the Interior. The program affects about 350,000 Indians living on reservations. Transferred to PHS from the Bureau are 3600 employees and 970 buildings. Fifty-six hospitals, 21 health centers, 13 boarding school infirmaries and numerous other health structures are included in the transferred real estate, which is estimated to be worth about $40 million.

LOCAL ORDINANCES LICENSING PHYSICIANS

Recently, a community in Arizona endeavored by ordinance to license and regulate the practice of medicine. Received by the Association attor-

neys, an important legal opinion was rendered which, in part, is recited below for the benefit of the membership, as its implications might concern your locality at some future date.

The town in question is what is termed a common council town, having only such powers as are expressly conferred upon it by the legislature, or as arise by necessary implication from these express powers. The legislature has given common councils the power to adopt licensing ordinance *but* only as revenue-raising measures, not for purposes of regulation. The statute significantly omits any reference to discretionary powers such as the right to revoke a license, or the right to set conditions of issue.

A city ordinance in any form may not regulate a doctor's practice, as the regulation of the practice of medicine has been pre-empted by the State under the medical practice Act. Where the State has pre-empted a field of State-wide concern, such as the licensing of physicians and surgeons, local governments may not legislate in conflict therewith.

In conclusion: an ordinance which licenses doctors, such as that of the common council town in question, might be valid if it were nothing more than a revenue-raising measure. Such a licensing ordinance would have to be so drafted that the common council could not refuse to issue a license to any physician licensed to practice by the State. Neither could the ordinance limit the number of licenses to be issued, nor control the physician's practice in any way by means of a licensing ordinance. The ordinance would have to be so drafted that a license, once issued, could not be revoked, discontinued or withheld except for failure to pay the prescribed fee.

ARIZONA PHYSICIANS AND AMEF

MANY members of the Arizona Medical Association apparently are unaware that no action was taken by the House of Delegates in 1955 for the allocation of a portion of the dues or other association monies to Medical Education through A.M.E.F.

Contributions to this important project are entirely on a voluntary basis this year in Arizona, and all physicians are urged to be as generous as possible in their gifts.

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CIVICS

Norman A. Ross, M.D.

A PUBLIC HEARING

WE attended the hearing on June 22, 1955 by invitation of the Arizona State Board of Public Health when it made public its interpretation and its plans for the administration of Arizona's new tuberculosis bill.

This public hearing was well attended by persons from the Public Health Department including its director and the head of the tuberculosis program, who since July 1, 1955, is by this law designated as Arizona's Tuberculosis Control Officer. There were, as well, representatives of the legislative bodies, the Welfare Board, the Attorney General's office, Boards of Supervisors, volunteer agencies (Tuberculosis and Health Association), the Director of the Tuberculosis Sanitorium at Tempe, and physicians interested in tuberculosis treatment.

It was made clear that the intent of the legislature was that the central or state agency should render assistance, both financial and advisory when asked to do so by the county health units and the Boards of Supervisors of the several counties, in instances where there was no county health unit in a country, by request of the board of Supervisors of that county. We were informed as to the proposed procedure for distributing the money appropriated by the legislature, of the possibility of all of the money being expended in three or less months on the present hospitalized tuberculosis case, should the local Boards of Supervisors insist on such distribution.

The Director stated that he hoped all would consider this a pilot study and that they might be permitted to direct this relief toward new and untreated cases. He felt the value of the program could thus be proven before the legislature met again in regular session in January of 1956.

This public hearing and the interest shown by the Board of Health of the State of Arizona in acquainting the several agencies, as well as the public, with the tuberculosis bill is deserving of commendation. It is heartening to find a Board that will open its deliberations and discuss administrative procedure openly, publicly. It is good government and good public relations on the part of our Arizona State Public Health Board and their State Health Department.

Thank you, State Board of Health, for effecting this, your civic duty.

* * * * *

AMERICAN CANCER SOCIETY, INC., Arizona Division, 1429 North 1st Street, Phoenix, Arizona.

A liason series of conferences is going to be held this Fall between the local unit of the Arizona Division, American Cancer Society and the Veterans Administration Hospital in Phoenix. There will be films shown to both Medical and Lay personnel. Research data and publications will be furnished to the local Veterans Administration by the Arizona Division. The full details of the program will be worked out by the Board of Directors of the Arizona Division, A.C.S., and the Administrators of the Veterans Administration Hospital.

The dates for the 1956 Seminar have been set for January 26, 27 and 28 at Paradise Inn, Phoenix, Arizona. The program is now in the formative stage; amongst the speakers we hope to have, O. Theron Claggett, M.D., from Mayo Clinic; Joe Vincent Meigs, M.D., Clinical Professor of Gynecology, Harvard Medical, Boston; and Averill Liebow, M.D., Professor of Pathology, Yale University of Medicine, New Haven, Connecticut.

* * * * *

UNITED CEREBRAL PALSY ASSOCIATION OF CENTRAL ARIZONA, INC., 718 Security Building, Phoenix, Arizona.

U.C.P.A. will continue with its present services in the medical, educational, vocational, recreational and general fields, with emphasis on evaluation and case management by an active medical advisory group of five individual specialists.

There are several extensions of present services as follows:

A mobile self-contained 35' trailer van is being custom-constructed by Medical Coaches, Inc. The firm is fabricating a coach that will be divided into three interior departments: physical therapy, occupational therapy and

speech therapy, complete with all necessary equipment. A van of this nature can extend the excellent services available in the Phoenix area to less fortunate communities.

Staffed by a crew of three or four professional personnel, the unit will commence operation in late October or early November.

Zoning regulations have been approved that will permit U.S.P.A. to commence construction of its sheltered workshop facility at 29th Street and East Roosevelt in Phoenix. The shop will provide employment on a training basis for some twenty handicapped adults in conditions simulating competitive regular industry.

* * * * *

THE HEALTH INSURANCE COUNCIL (Information Division), 522 Fifth Avenue, New York 36, New York.

A preliminary report on the annual survey "THE EXTENT OF VOLUNTARY HEALTH INSURANCE COVERAGE IN THE UNITED STATES" as of December 31, 1954, from the Health Insurance Council has just been received from the Editor. This is an advance copy, the booklet which is the final report will include state by state figures and will be issued by the Council in the Fall of 1955.

The importance of a thorough study of health insurance is apparent from the following quotations from this release:

"Nearly two out of every three men, women, and children in the United States now are protected by voluntary health insurance."

"This survey shows," said Council chairman John H. Miller, "that many more Americans now have more and better health insurance than ever before. Measured in terms of benefits paid out by insuring organizations in 1954, striking progress was made during the year. And the survey figures indicate continuing progress at rapid rates for the forseeable future."

Mr. Miller estimates that, by the end of this month, some 104 million persons will have voluntary health insurance against hospital expenses. About 89 million people will have surgical expense protection, and 50 million will have regular medical expense protection. These figures are based on conservative projections of the 1954 year-end data presented in the survey, Mr. Miller said.

Of the aggregate benefit payments in 1954 by all forms of voluntary health insurance, 56% of the total came from the insurance companies.

Blue Cross and Blue Shield type plans paid more than $1 billion, or 39% of the total. Various independent plans accounted for the remaining 5% of the total.

The newest form of voluntary health insurance — major medical expense insurance — is shown by the survey to protect more than 2.2 million persons against the costs of catastrophic illness. This figure represents a gain of 83% during last year.

Major medical expense insurance, the Council points out, not only goes beyond customary policies and plans in protecting against heavy hospital and doctor bills, but it also protects against almost all other types of medical expense due to disability, including the costs of special duty nursing, artificial limbs and appliances, and drugs and medicines.

The rapid growth of hospital, surgical, and regular medical expense insurance during 1954 was a continuance of truly spectacular trends that have been in progress for more than a decade. The annals of American business contain few parallels of the record made.

Remarkable as has been the growth of major medical expense insurance in the past few years, insurance-company experts widely believe that even more striking developments will be seen in the near future. Blue Cross-Blue Shield officials also are giving increasing attention to the possibilities of this new type of protection. Historically, as chart IV illustrates, new forms of health insurance have won public acceptance at an accelerating pace.

The preliminary report is so lengthy that it could not be presented on this page. Our copy of this release is available for the asking. It is not too early now to write for the 1954 final report by the Health Insurance Council.

* * * * *

THE NATIONAL FUND FOR MEDICAL EDUCATION, 2 West 46th Street, New York 36, N. Y.

If the circular MEDICAL ADVANCE, June-July 1955 issue has not come to your attention, contact the Editor, Raymond Torr.

This pamphlet is the best presentation and the most readable review of the development of and programming of polio vaccine that has come to our attention. We are writing for additional copies and intend to furnish this as an answer to the questions we receive from patients.

BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

411 Security Building, Phoenix, Arizona

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, July 16, 1955, issued certificates to practice medicine and surgery in this State to the following doctors of medicine:

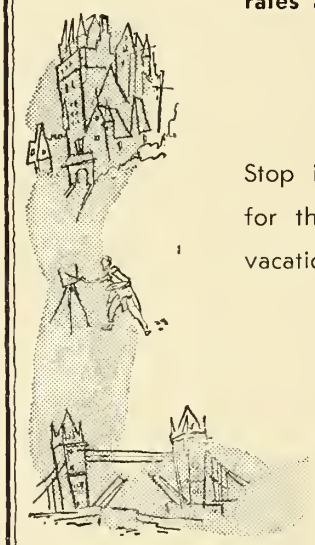
ALEXANDER, CLIFTON JACK, 1226 N. Havenhurst Dr., Los Angeles, Calif.
ALLINSON, FRANCIS W., 206 E. Main St., Mesa, Arizona.
BARRETT, ROBERT S., 356 W. Roma, Phoenix, Arizona.
BERRY, CARL Z., 2410 E. Elm St., Tucson, Arizona.
BOND, WILLIAM H., 1313 N. Second St., Phoenix, Arizona.
BULL, LELON J., 819 Howe Street, Tempe, Arizona.
BURLEIGH, JOHN S., 116 N. Tucson Blvd., Tucson, Arizona.
CALKINS, JAMES P., 45 N. Tucson Blvd., Tucson, Arizona.
CLOUD, DANIEL T., JR., 709 Professional Building, Phoenix, Arizona.
DEW, PHILIP E., 130 S. Scott, Tucson, Arizona.
ELKINS, CHARLES W., 1613 N. Tucson Blvd., Tucson, Arizona.
FOREMAN, ROBERT C., 800 N. First Ave., Phoenix, Arizona.
HANSBRO, GERALD L., Professional Building, Phoenix, Arizona.
HOCHREIN, HEINZ F., Morenci Hospital, Morenci, Arizona.
INSCORE, RAY P., 434 W. Gurley, Prescott, Arizona.
JACKSON, ROCKWELL E., 130 S. Scott St., Tucson, Arizona.
KLUNDER, THORWALD H., Miami Inspiration Hospital, Miami, Arizona.
LIDDICOAT, DOUGLAS A., 9357 W. Monroe St., Tolleson, Arizona.
MERKEL, GILES G., McNary, Arizona.
REICH, EVA, Hancock, Maine.
SADLER, PAUL E., 1313 N. Second Street, Phoenix, Arizona.
SCHWEIGER, THEODORE R., 2011 Third Ave., E., Hibbing, Minnesota.
SMEDAL, ERLING A., 1525 N. Tucson Blvd., Tucson, Arizona.
SOLAND, WESLEY A., 1602 N. Norton, Tucson, Arizona.
TEXTER, ELMER C., 7457 Gratiot Ave., Detroit 13, Michigan.
THOMSON, JAMES E. M., 1000 S. 13th St., Lincoln, Nebraska.
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WOMAN'S AUXILIARY TO THE A.M.A. CONVENTION REPORT JUNE 1955



Mrs. Roy Hewitt

THE Woman's Auxiliary to the American Medical Association met in Atlantic City, June 6th through June 10th, 1955. Headquarters were at the Hotel Haddon Hall. Over 1700 women registered, representing 70,000 members in every state, Alaska, and Hawaii. 426 delegates answered roll call.

Preconvention activities on Monday included panel discussions on legislation, public relations, newsletters, and promotion of the magazine **Today's Health.** Mrs. Charles L. Goodhand, chairman of legislation, urged the auxiliary members to study and become better informed about the following bills, which are of general interest to the medical profession:

1. The Bricker Amendment
2. The Re-insurance Bill
3. The Jenkins Keogh Bill

She also urged auxiliary members to belong to local and state P.T.A. groups, the League of Women Voters, and public health associations, and to take active part in their work.

Mr. Robert Enlow, circulation director of **Today's Health** magazine, presented the following awards to the winners of the National Auxiliary 1954-55 circulation contest:

Group I—state auxiliaries with membership of 1,400 — Wyoming,

Group II—state auxiliaries with membership of 401-1000,—Nebraska, and

Group III—state auxiliaries with membership of 1,001-2000—Florida.

Arizona was one of thirteen states which reached or exceeded 100% of their quota in the subscription contest.

A tea honoring Mrs. George Turner of El Paso, Texas, and the president-elect, Mrs. Mason G. Lawson of Little Rock, Arkansas, was held Monday afternoon in the Rutland Room, Hotel Haddon Hall. Invited guests included members of the national board of directors, national committee chairmen, state presidents and presidents-elect, and wives of the A.M.A. officers and trustees.

Formal opening of the convention was Tuesday morning. Mrs. Turner presided during the general session, at which various state reports in addition to regular convention business were presented. At this meeting the delegates honored two past presidents by voting them life membership. The two presidents so honored were Mrs. Arthur A. Herold of Shreveport, La., and our own delegate Mrs. Jesse Hamer of Phoenix, Ariz. The Arizona delegates were indeed proud of the honor bestowed upon Arizona and upon our invaluable adviser, Mrs. Hamer.

Tuesday's luncheon honoring the past presidents of the Women's Auxiliary to the A.M.A. was presided over by Mrs. George Turner. Lovely leis were presented to the honored guests by the Hawaiian delegation. "The People Defeat Polio" was the subject of the luncheon address, given by Mrs. Beatrice Wright Fuerst, assistant director of women's activities, National Foundation for Infantile Paralysis. Mrs. Fuerst urged doctors and their wives to join in an educational campaign to convince reluctant parents of the importance of letting their children take the Salk polio vaccine. Since the results of the test were announced, there have been "confusion, gossip, and rumor," she said. "But no one can deny the fact that for the first time in the history of man we have a vaccine to prevent paralytic polio in human beings." Mrs. Fuerst pointed out that the vaccine was found to be 60-90%

effective, not 100%. No vaccine can prevent all cases of a disease against which it is directed, she said, but a calm look at the polio vaccine situation shows how beneficial the results are. The speaker expressed the appreciation of the National Foundation for Infantiye Paralysis for the help given by the auxiliaries, as well as Americans in general, through the March of Dimes, which made possible the long and costly research, brought to a successful climax by Dr. Jonas E. Salk in his discovery of a preventive polio vaccine.

The Wednesday luncheon honoring Mrs. George Turner, president, and Mrs. Mason G. Lawson, president-elect, was held in the Carolina room at the Hotel Chalfonte. Mrs. David W. Thomas, past national president, presided. Dr. Martin, retiring president of the A.M.A., was guest speaker. Mr. Martin complimented the auxiliary for its many efforts in improving the nation's health through communty programs, particularly the aid in developing facilities and personnel for the care of the mentally ill. The mental health picture is rather distressing, he said, because medical illness and its causes are little known to medical science. In the field of mental illness medicines today is at the point it was in regard to contagious diseases fifty years ago, Dr. Martin said. Since then, however, the causes of communicable diseases have been found, and as a result these diseases have been practically wiped out. The speaker told of steps organized medicine has taken, in cooperation with other interested groups, to study all problems of mental diseases. Because of this study he feels that progress is being made toward the eventual eradication of many of the more prevelent forms of mental illness.

One of the highlights of this luncheon was the presentation of a check for $62,000 by the auxiliary to the American Medical Education Foundation. A previous donation brought the total to some $80,000 for the year. Dr. George P. Lull of Chicago, A.M.E.F. vice president, in accepting this check complimented the auxiliary in its efforts to aid the eighty medical schools in the country in maintaining their faculties, and physical facilities at high standards.

A.M.E.F. awards of merit for 1954-55 were given to twelve auxiliaries and to two auxiliary members. California, Florida, New Jersey, Ohio, Indiana, Louisiana, and Texas were the states honored. Individual awards were presented to Mrs. John H. Dean, Houston, Texas, and to Mrs. Frank Gastineau, Indianapolis, Ind., A.M.E.F. National Auxiliary chairman. Mrs. Turner also

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presented $100 to the national committee on Careers in Nursing and $100 to the World Medical Association.

Round table discussions concerning civil defense, mental health, and nurse recruitment were continued in the afternoon session. Again Arizona was honored by being asked to participate on the panel on nurse recruitment. Mrs. Max Costin, immediate past state chairman of nurse recuitment, because of her outstanding work during the year had been asked to lead a discussion of the topic "Operation High School Counselors". Since Mrs. Costin was unable to attend, however, your president was asked to substitute for her. This panel was the only one at the convention that was made up of auxiliary members. Other panels were made up of guest speakers, nd naational committee chairmen.

The closing session on Thursday morning featured installation ceremonies, presided over by Mrs. Luther Kice of New York City, a past national auxiliary president. The following officers were installed: Mrs. Mason G. Lawson, Little Rock, Arkansas, president; Mrs. Robert Flanders of Manchester, N. H., President-elect; Mrs. Paul C. Craig, Wyomissing, Pa., first vice-president; Mrs. E. Arthur Underwood, of Vancouver, Wash., second vice-president; Mrs. Clark Bailey, of Harlan, Ky., third vice-president; Mrs. E. Benjamin Gillette, of Akron, Ohio, fourth vice-president; Mrs. Eager A. Quayle, of Bethesda, Md., fifth-vice president. Mrs. Carl Burkland, of Carmichael, Calif., was chosen constitutional secretary and Mrs. George H. Garrison of Oklahoma City, Okla., treasurer. The following were named directors: Mrs. Harlan English of Danville, Ill., Mrs. Ross P. Daniel, of Beckley, W. Va., and Mrs. William Mackersie of Detroit.

In her inaugural address, Mrs. Lawson described the role of the doctor's wife and outlined projects for the year 1955-56. "Since we are of one heart and mind with our physician husbands, we must assume the responsibility of active health leadership, which they and the community have every right to expect of us." Our program is one of education and cooperation education of ourselves, cooperation with our community. Our program prepares us to go to the people. But our community service or our public relations depend solely upon our ability to serve as leaders in safeguarding the health of the community in which we live."

Mrs. Lawson urged that the membership broaden its successful program in Nurse Recruitment to include personnel for related fields such as medical technicians, who are also badly needed.

She stated in her address that some state and county auxiliaries have made studies of existing health facilities in their communities, and urged others to make such surveys in the coming year. "We want the people to know," she said, "what has been provided as a safeguard for their health by the private physician, the voluntary and tax supported health agencies, the hospitals and treatment centers, and the teaching institutions as they concern medical service."

Mrs. Lawson asked auxiliary members to redouble their efforts on behalf of the A.M.E.F. Other activities she stressed as important included safety education programs, baby sitters' training courses, support of the American Heritage Foundation and Radio Free Europe, Civil Defense, and Mental Health.

At the Friday conference national officers, directors, and committee chairmen met with state presidents and presidents-elect to be briefed on the program for the year 1955-56. Arizona was represented by Mrs. Jesse D. Hamer, National Historian, Phoenix, Mrs. Clarence Kuhlman, Tucson, Mrs. Ashton Taylor, Phoenix, and Mrs. Robert G. Delph, Chandler. As your newly elected president, the writer acted as chairman of delegates, served on the national election committee, read the president's report, participated in the nurse recruitment panel, and served as your official reporter for the convention proceedings.

MEETING NOTICE

THE Institute of Industrial Health of the University of Cincinnati announces another in its series of postgraduate courses. **Modern Considerations and Methods in Handling the Lead Problems in Industry** will be presented during the week of November 7-11, 1955, by the Kettering Laboratory in the Department of Preventative Medicine and Industrial Health of the University of Cincinnati. The purpose of this course is to present the most recent information concerning the prevention and control of the lead problem in modern industry.

For an application blank write Secretary,, Inof Industrial Health, Kettering Laboratory, Eden and Bethesda Avenues, Cincinnati 19, Ohio.

ARIZONA *Pharmaceutical* PAGE

BEAUTY AND THE BOOBY TRAP

By Joseph A Zapotocky, Ph.D.
College of Pharmacy, University of Arizona

THE premise that medication must be unpleasant to the senses in order to be effective is now recognized as a classic fallacy. Today, a patient, regardless of his age or condition, has less antipathy towards taking drugs because the elegant appearance, fragrant aroma, and pleasant taste combine to make medication more attractive.

Is it likely that twenty five year ago a child would have reminded his parents to give him the daily dose of vitamins or an expected dose of a cough syrup? Did the child of that period fake a headache just to be given some aspirin? Attractively flavored liquids or water miscible vitamin concentrates have displayed the fishy oils with their penetrating odor, nauseating taste, and unpleasant after-taste. Tablets and capsules are now delicately flavored and not to be outdone in their color schemes and shapes by the latest model cars. Each product, from its attractively labeled package to its individual dosage form, is a masterpiece of art achieved by a careful coordination of color, flavor, and fragrance.

At one time, the big problem of parents was to get their children to take medicine without a great deal of turmoil. Hence, the manufacturer put forth much effort to make his products fit the demands of the public. The retail pharmacist also became more adept in the use of colors and flavors, and today he is prepared to meet the taste preference of any patient if so ordered by the physician. The pharmacist is acquiring more skill in the use of artificial flavor to augment the standard flavors of *The United States Pharmacopoeia* and *The National Formulary;* cherry, raspberry, lemon, chocolate, orange, licorice, eriodictyon, and peppermint.

It is now no longer a question of forcing a child to take his medicine but of preventing him from imbibing too freely or taking medication without his parents' knowledge.

The taste and visual appeal of modern medicines points to a need for educating parents in the proper storage and handling of medicines in the home, regardless of whether they are obtained by prescription or purchased as a household remedy of their own choosing. Only recently have physicians and pharmacists made a concerted effort to publicize the dangers of leaving medication within the easy reach of children. The booklet, *What's the Answer?*, prepared by the Maricopa Society is an excellent example of education directed toward the home for the prevention of child accidents regardless of source. The pharmacists, because of their close contact with the public and because of their role in dispensing drugs, are embarking on a nationwide campaign to educate the public with regard to the proper storage and handling of medicines as a means of preventing child accidents. In a sense it can be considered that beauty has become a booby trap for the young and unknowing. However, education of parents rather than a return to medication in its more unpleasant forms is the solution to the problem.

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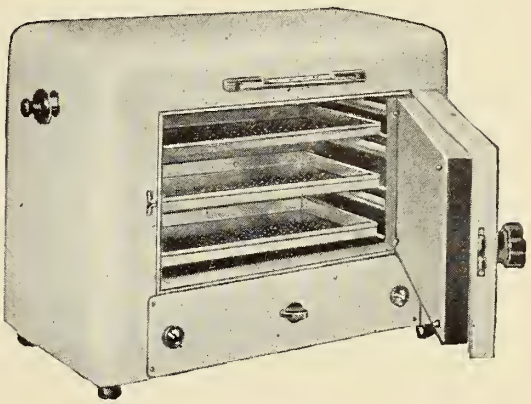
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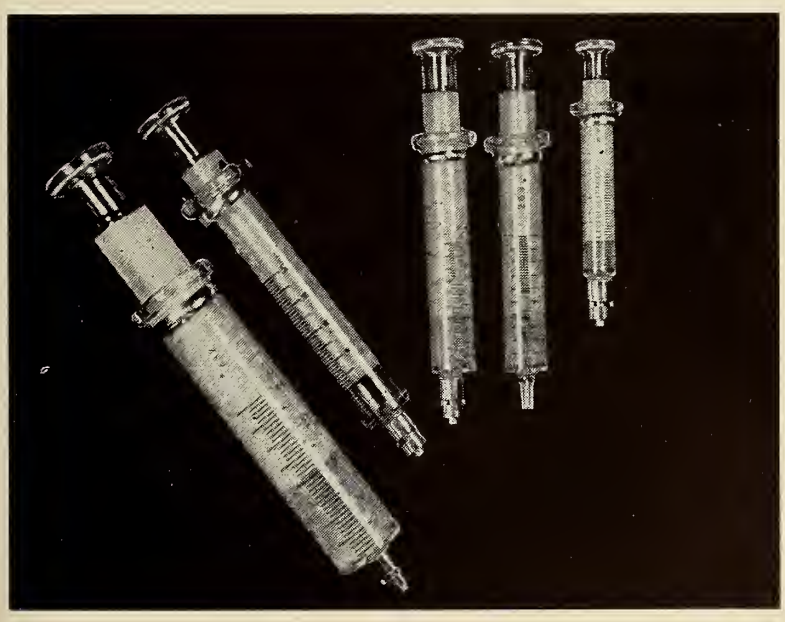
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Book REVIEWS

THE CARE OF YOUR SKIN. (Herbert Lawrence, M.D.; Little Brown and Co., Boston, 1955. 95 pp.)

This short book is written primarily for the acne patient. Although the material is presented in non-medical terms, it is scientifically sound and accurate. Without talking down to the reader the author discusses and disposes of some misconceptions and falsehoods, and gives some facts as they are truly known about the causes and treatment of acne. The emotional problems associated with the condition are analyzed and solutions for these problems are presented.

The booklet should prove to be valuable to the acne patient, but it might also prove to be valuable to the physician treating him — either the family doctor or the specialist. The doctor is given valuable hints about what to say to the patient during the course of the treatment. The patient is provided with important information which will enable him to co-operate better with the doctor, thus rendering the doctor's work easier and more effective.

This is a good and useful little book.

L. G. Jekel, M.D.

GOOD NEWS FOR DIABETICS

A new cookbook, THE DIABETIC'S COOKBOOK, will be published this fall. It contains 250 recipes for preparing beverages, pastries, desserts, fruits, meats, salads, sandwiches, and vegetables. American Diebetic Association values and exchange lists are used throughout the book. Also, pages are included for the diabetic to fill in his own diet prescribtion. Every recipe shows total amounts of carbohydrates, proteins, and fats as well as the caloric value of each serving. Therefore, with this information plus the diet prescription, all in one book, the diabetic can readily prepare 250 delicious and tested dishes that fit in his diet.

Indeed, THE DIABETIC'S COOKBOOK is such a practical cookbook for diabetics that Dr. Charles H. Best, one of the discoverers of insulin, has written the introduction. In it, he says, "I have no hesitation in recommending this book most highly and I feel sure that a very large number of diabetics — and their families — will welcome its publication and will profit by reading it."

The author of THE DIABETIC'S COOKBOOK, Mrs Clarice B. Strachan, of Tulsa, Oklahoma, developed and proved the recipes over a period of 14 years during which she cooked for her diabetic son. Mrs. Strachan has combined a strong scientific background with the delicate artistry of the kitchen to produce a volume which will add variety and zest to the diabetic's menu.

THE DIABETIC'S COOKBOOK is published by The Medical Arts Publishing Foundation, 1603 Oakland Street, Houston 4, Texas. The price is $6.50. Copies can be obtained from your bookstore or by writing directly to the publisher.



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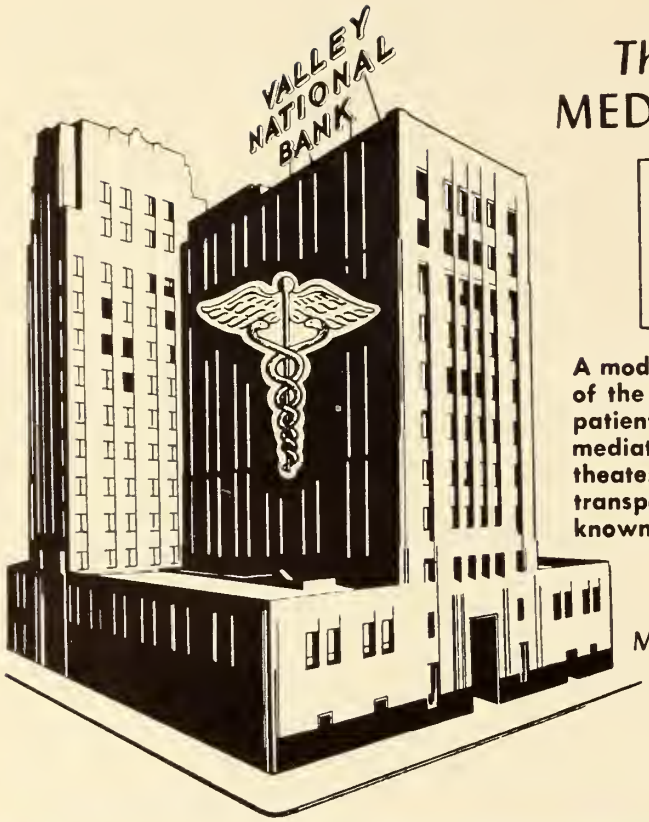
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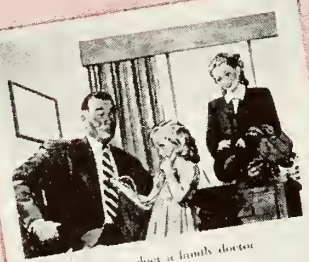


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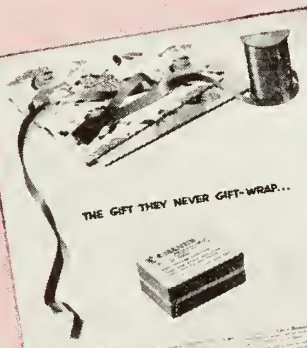
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THE PREVENTION OF RECURRENT URINARY CALCULI

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AFTER a long era of unintentional neglect, the medical profession has become aware of the fact that the formation of urinary stones is a symptom and not a disease. And with this awareness has come the realization that our obligation to the patient does not terminate when the offending calculus has been removed. Rather, our responsibility is just beginning, for we currently have at hand measures which, though not a guarantee against stone formation, will do much to minimize the possibility of recurrent stones. The value of obviating the attendant misery to the patient and the danger to functioning renal tissue is perspicuous. It was with the hope of reviewing some of the acceptable and effective anti-stone regimens that this paper was prepared.

Though urinary calculus disease is an ubiquitous entity, it is well known that Arizona shares with Southern California and Florida the dubious distinction of belonging to America's Stone Belt.(1). Because of this, it is probable that in Arizona more patients with urinary tract stones are seen than in some other sections of our country. It is also accepted that recurrent stones are more frequently observed in this area as the factors tending to produce the initial stone are usually still prevalent after its removal. The significance of this should be emphasized, for the salient long range factor in the battle against stone recurrence concerns the preservation of renal function. With the spontaneous or surgical removal of every stone, alterations of major or minor degree take place in the kidney which, in addition to reducing renal function, also predisposes to the subsequent development of further stones. We are all familiar with the end stage in extensive stone disease with the tragic appearance of ever increasing azotemia, or with stone damage so extensive that good health and sometimes life are not sustainable.

The aforementioned neglect of the past does not merit lengthy consideration. It is well to recall that in analyses by Higgins and others, recurrent stones occurred in 16.9 per cent, and if only those cases were considered in which urinary infection was present, this figure of recurrence was as high as 30 per cent. It is true that measures were not at hand during that period of observation as effective as those available to us now. But more responsible for this unacceptable recurrence rate was the fact that the philosophy in the past had been to remove the stones that were present and then passively await the development of others. Unfortunately, all too often, there was no disappointment in this sense.

A scientific approach to stone formation was preceded by rational but often ineffectual measures. These included the acid ash or alkaline ash diet and increased fluid intake. It was not until accurate methods of quantitative analysis of the components that form stones as seen in the serum, stool, and in urine were available that well founded preventative diets were developed. Equally pertinent was the development of accurate methods for the analysis of the nidus

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of the stone. By this means it is possible to identify the initial crystalloid substances which coalesce to form a stone, and to propose methods to prevent the initial precipitation of this crystalloid.(2)

The actual physico-chemical processes involved in the formation of a renal stone comprise a polemic subject. Whether the initiating "seed" develops as a subepithelial crystal which causes erosion of the epithelium over a renal papilla or whether it is simple precipitation of crystalloids from a supersaturated solution is not conclusively established. Nonetheless it is known that if a situation exists, either in the collecting tubules or calyceal system, in which the crystalloid-colloidal baalnce is subjected to greater saturation than can be compensated, precipitation and subsequent stone formation will occur. Such a situation is present in the development of calcium phosphate stones when calcium excretion is greatly increased for one reason or another. Marked increases in calcium excretion in hyperparathyroidism, idiopathic hypercalcinuria, vitamin D intoxication, recubency, postmenopausal osteoporosis, cortisone therapy and so forth, are familiar to all of you. Such conditions also result in calcium carbonate stones. When infection is present, especially with urea splitting organism, magnesium ammonium phosphate stones form rapidly. The altered metabolism resulting in increased urate or cystine excretion acts in a similar manner to produce stones of corresponding composition. (See Table 1)

It is immediately apparent that several simple measures will be of aid in the patient who has had a urinary stone. By increasing fluid intake, the resultant urine will be correspondingly more dilute. Hence urinary crystalloids such as calcium phosphate, uric acid and so on, will be less saturated and less likely to precipitate. Vermuelen, Goetz and co-workers, using zinc discs in rat bladders demonstrated quantitatively the much more rapid growth of stones on these discs with conditions of dehydration.(3). The benefit of this simple feature is unquestioned but great excesses of water often are intolerable to the patient because of anorexia and other side effects. Depending on the type of stone, an additional method of management includes the use of an acid ash or alkaline ash diet. By thus altering the urinary pH, the solubility of any stone forming substance may be enhanced. Needless to say, many other factors such as adequate vitamin A to prevent keratinization of the uroepithelium, correction of strictures and vesical neck obstruction to obviate stagnation of urine, and attempts to control infection have all served a useful purpose in the past.

Three recent methods to aid in stone prevention will be briefly reviewed with their attendant rationale. All are utilized as adjuncts to the more conventional high fluid and dietary programs just discussed. The first will be mentioned only for the sake of completeness. In the prevention of calcium stones it was found that citric acid formed a very soluble substance when it combined with calcium. Unfortunately, ingested citric acid is almost completely metabolized. However, estrogenic substances were found to increase markedly the endogenous production and excretion of citric acid. This method has not been widely accepted as the dosages of female hormones required are sufficient to produce menstrual changes in women and feminization in men.(4) Of the two most widely heralded anti-stone programs, the first concerns the usage

TABLE 1

ETIOLOGICAL FACTORS IN FORMATION OF STONES OF VARYING CHEMICAL COMPOSITION

Chemical Analysis of Stone Nidus	%	Reaction of Urine	Accepted Etiological Factors
Calcium Phosphate	61	Slightly acid to slightly alkaline	Hypercalcinuria: High calcium intake; Recumbency; Vitamin D intoxication; Infection; Post-menopausal osteoporosis; Ideopathic hypercalcinuria; Hyperparathyroidism.
Calcium Carbonate	4	Neutral to slightly alkaline	Same as for calcium phosphate
Magnesium ammonium phosphate	Usually secondary	Alkaline	Urinary infections especially with urea-splitters; Presence of calcium phosphate nidus; High phosphate excretion.
Calcium oxalate	23	Neutral to slightly alkaline	High calcium and oxalate intake; Dehydration; Nidus of calcium phosphate
Uric acid	10	Acid	Gout; Dehydration.
Cystine and xanthine	1	Acid	Familial defect (Metabolic defect)

of hyaluronidase. It has long been postulated that crystalloids in the urine which are normally in a supersaturated solution, are prevented from precipitating by their adherence to urinary colloids. These colloids, carrying similar electric charges, act to repel other colloidal particles and thereby prevent conglomerates from forming. Dr. A. J. Butt and his co-workers have studied the dispersing powers of such colloids and found them to be especially abundant in pregnant women and Negroes – people in whom the incidence of stone formation is low. On the contrary he found that stone formers had reduced urinary colloids. He then proposed to increase the colloids in these people by injecting hyaluronidase subcutaneously at regular intervals. This substance acting upon the hyaluronic acid component of intracellular ground substance produces products which are excreted in the urine and have a strong peptinizing and dispersing action. The addition of these colloids acts to enhance protective colloidal action. By so doing he has shown with the electron-micriscope ultracentrifuge and also clinically, that stone formation is substantially depressed. (5). A gross examination of the patient's urine shows clearing of the turbidity usually seen in stone formers and reduction of crystalloid sediment.

Ephraim Shorr is credited with the second widely used anti-stone regimen. Rationale for his treatment rests in the fact that calcium phosphate is very often the initial crystal forming urinary stones and is believed by many to be the nidus for calcium carbonate, calcium oxalate, and magnesium ammonium phosphate stones. In an effort to reduce urinary phosphate excretion, he diverted the route of the phosphorus excretion from the urine by giving patients aluminum hydroxide orally. The aluminum combines with the phosphorus in the small bowel to form an insoluble aluminum phosphate which is almost entirely excreted in the stool. This results in a reduced phosphorus assimilation and a resultant hypophosphotemia. Very little prosphorus is then available for the glomerular filtrate and a compensatory increased reabsorption in the distal convoluted tubule takes place. Because of this, phosphorus is not present in significant quantities in the urine for precipitation with calcium, and stone formation is depressed.(6) Table 2 demonstrates this altered route of phosphorus excretion when such a program is instituted.

A review of the literature indicates that good results have been obtained with either method, supplementing the general features previously mentioned. It should be stated that Dr. Butt's results have not at all times been duplicated by others who have used hyaluronidase. Nonetheless, in Dr. Butt's initial series he treated twenty-four patients who had been chronic and rapid stone formers with 150 to 900 turbidity reducing units (TRU) of hyaluronidase every twenty-four to forty-eight hours. In 79 per cent of these (19) there were no new stones that developed nor was there progression in size of existing stones.(7) In four of these nineteen, stones already present appeared to become less dense. It is well to remember that the patients in this study had severe calculous disease and had demonstrated their propensity for stone formation by producing multiple calculi in the past.

Barrett presented a series of thirty-four patients who had had intractable stone disease.(8) He treated these with the regimen proposed by Ephraim Shorr. Using a neutral diet with 0.6 grams calcium, 1.2 grams phosphorus, and 0.2 grams magnesium per day, supplemented by 30 cc. of aluminum hydroxide gel Q.I.D., he was able to prevent formation of any new stones or increment in size of those already present in thirty of the thirty-four patients (88%). The

TABLE II

INGESTION AND EXCRETION OF SOME COMMON STONE CONSTITUENTS

Element	Mgms. Ingested Daily	Normal Serum Value (mg. %)	Mgms. Excreted Daily in Stool	Mgms. Excreted Daily in Urine
Calcium	700-900	9-11	500-600 (70%)	100-200 (30%)
Phosphorus	1200-1400	3-5	300-500 (30%)	1000 (70%)
Magnesium	500	1.9-2.1	100-200 (35%)	300-400 (65%)
EFFECT OF BASALJEL REGIMEN ON PHOSPHOROUS METABOLISM				
Patient receiving 120cc. of Basaljel daily with identical diet				
Phosphorous	1200-1400	3-5	1000-1300 (85%)	100-350 (15%)

period of observation extended over a period of twenty-one months. Undesirable side effects were few, manifesting themselves as mild anorexia or constipation.

In the past years, in an effort to evaluate the recently presented anti-stone programs, we have had the opportunity of following sixty-one patients who have had three or more stones develop in the five year period prior to our period of observation. All had been on conventional treatment consisting mainly of high fluid intake and some dietary restrictions. Because stones continued to be formed, they were considered suitable for our study. A larger group had been thoroughly evaluated and the presence of any obstruction, metabolic disorder, or infection determined. If any such feature was detected, the patients were excluded from the study. There remained sixty-one patients who had no primary cause for stone formation. Thereby, they represented that largest group — the idiopathic stone formers. They were then placed on varying programs. All were given fluid from 3500 to 4000 cc. of distilled water daily. All received multiple vitamins, all were well mobilized and maintained on a standard diet.

The first group of thirty-six patients received 30 cc. of aluminum hydroxide gel four times a day. Metabolic studies were done to determine the extent of reduction of phosphorus assimilation due to its precipitation with aluminum in the bowel. It was seen that urinary excretion of phosphorus could be reduced from a normal of about 1000 mg. daily to 150 to 350 mg. a day. Such a reduction did not interfere with the bionic state for the excellent factors of physiological economy, maintained positive phosphorus, calcium, and nitrogen balance. These 36 patients had had stone problems for an average of 7.9 years. In the past they had formed an average of 4.8 stones. Aluminum hydroxide gel was continued for an axerage at 21 months. We might have expected them to form 43 stones had these patients continued as their past records would indicate in this 21 month period of observation. Instead, only 11 stones appeared while under therapy, a conclusive decline in calculus formation.

Thirteen other patients had experienced the problem of forming urinary stones for an average of 6.1 years. In this period they had produced an average of 4.1 stones. This group was treated with hyaluronidase 150 to 750 T.R.U. every forty-eight hours for an average of fourteen months. Examinations of urine specimens to assure clearing of all turbidity were performed daily on some patients to evaluate grossly the effectiveness of this enzyme. In this group, seventeen stones were statistically anticipated and only eight (or less than 50%) appeared.

A final group of twelve patients who had less severe calculous disease for an average of 4.9 years (and had had an average formation of 3.9 stones in this period) were treated by intensive urinary acidification. Using sodium acid phosphate gr.10 Q.I.D. and careful appraisal with a Lamotte indicator, the pH was maintained between 5.5 and 6.0 as much as possible. Again the anicipated stone formation was cut in half with only eight stones foring against a calculated sixteen. It would be timely to indicate that though acidification programs are the most easily tolerated, they are not always feasible. Their rationale is based on the fact that the solubility of stones such as calcium phosphate doubles with each 0.5 unit reduction in pH (within the usual urinary range of 5.0-7.0). The efficacy of this hydrogen ion alteration is therefore apparent. However, such programs are contraindicated if impaired renal function has already been accompanied by acidosis. Secondly, in severe stone problems in which refractory urinary infections as with Proteus and other urea splitters is present, the urine is often in the acid range only in the collecting tubules. Upon entrance into the infected renal pelvis, the excessive ammonia formation by the bacteria makes acidification an impossibility. In such instances the increased mobilization of calcium produced by acidification may, in conjunction with the alkalinity of the infected renal pelvis, actually act in deleterious manner and enhance the formation of stones. Schematic data demonstrating the success and failure to produce acidification in sterile and infected urines respectively is shown in Figure 3.

From the results in the literature and in our own study, it is apparent that attention to diet, supplemented by one of the new and rational stone programs will substantially reduce the severity of this disease. Other proposed regimens utilizing enzymes such as urease to break up the stone matrix have not been evaluated. Table 4 summarizes the results of our study.

Most significant is the realization that much can be done to aid the recurrent stone former.

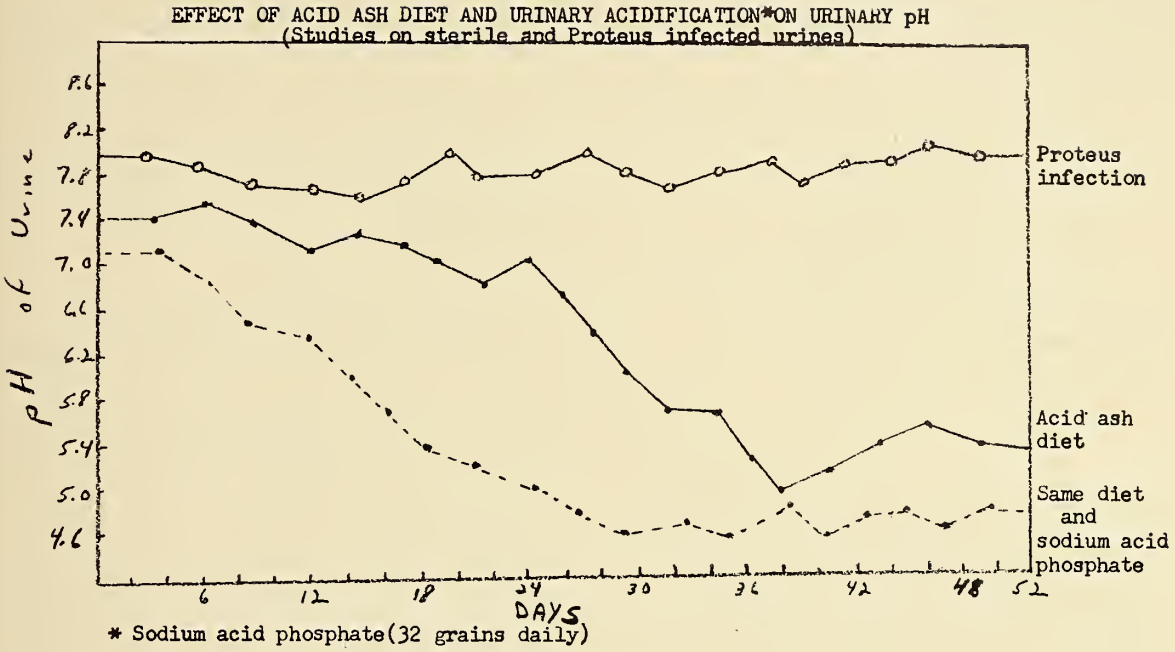


TABLE IV

RESULTS OF VARIOUS ANTI-STONE REGIMENS IN 61 CHRONIC STONE FORMERS

Type of Regimen	No. of Patients	Ave. Duration Calculous Disease	Aver. No. of Previous Stones	Ave. Duration of Regimen	Ave. No. Stones Formed During Regimen	Ave. No. Stones Formed During Similar Period Before Therapy
Aluminum hydroxide	36	7.9 yrs.	4.8	21 months	.3 per patient (11 stones)	1.2 per patient (43 stones)
Hyaluronidase	13	6.1 yrs.	4.1	14 months	.6 per patient (8 stones)	1.3 per patient (17 stones)
Uurinary acidification	12	4.9 yrs.	3.9	20 months	.7 per patient (8 stones)	1.4 per patient (16 stones)

Best results are obtained on rigid management that renders every opportunity to avoid further calculous disease. General measures include high fluid intake, adequate vitamin ingestion, absolute control of infection and relief of obstruction, active mobility, and frequent follow ups. Specific therapy depends upon the type of stone disclosed by chemical or diffraction analysis. Calcium phosphate, calcium carbonate, magnesium ammonium phosphate and calcium oxalate respond best to urinary avidification or aluminum hydroxide gel or possibly both. It is implicit that the more seriously the condition threatens the physical integrity of the patient, the more vigorous and stringent will be the therapeutic efforts. Uric acid and xanthine stones are best prevented by a restricted protein, alkaline ash diet supplemented by a substance such as sodium citrate four grams Q.I.D. to alkalinize the urine. In particularly difficult problems, hyaluronidase might also be employed in these cases. With careful observation and patient surveillance, good results may be anticipated for any rational regime. Suggestions for prevention of recurrent urinary stones are outlined in tables 5 and 6.

TABLE V

GENERAL PRINCIPLES IN ALL ANTI-STONE REGIMENS

1. Fluids to 3500-4000 cc. daily. (Distilled or boiled)
2. Multiple vitamin tablet twice daily.
3. Correction of all obstructive features.
   a) No residual in bladder.
   b) No retention in renal pelves.
4. Absolute control of infection.
   a) Culture and sensitivity studies.
   b) Intermittent antimicrobials.
5. Early mobility.
6. Persistent and prolonged surveillance.
   a) Microscopic urinalysis every 2 months.
   b) KUB every 6 months.
   c) Daily pH determinations by patients.
7. Chmical analysis of stone nidus.
8. Dietary restriction as indicated by stone analysis.

Summary: The significance of recurrent stone formation and some of the more recent concepts concerning prevention have been reviewed.

TABLE VI

SPECIFIC THERAPY FOR STONES OF VARYING CHEMICAL COMPOSITION

1. **Calcium phosphate**
   a) All general principles.
   b) Acid dish diet.
   c) Restriction of calcium and phosphorous intake.
   d) Urinary acidification.
   (Soduim acid phosphate gr. x Q.I.D.)
   e) Basaljel (15-30cc. Q.I.D.)
2. **Calcium carbonate**
   a) Same as for calcium phosphate.
3. **Magnesium ammonium phosphate**
   a) Same as for calcium phosphate.
   b) Particular attendtion to eradication of infection.
   (Use of Furadantin for Proteus)
   c) Early and intense treatment for urea-splitters.
4. **Calcium oxalate**
   a) Same as for calcium phosphate.
   b) Diet low in oxalates.
5. **Uric acid, Xanthine, and Cystine**
   a) All general principles.
   b) Alkaline ash, low protein diet.
   c) Urinary alkalinization. (Sodium citrate 3 gms. Q.I.D.)

The proposal that many renal stones can be prevented has been entertained. It is assumed that the responsibility of this prevention rests on the physician to meet with his patient. The principles of management are familiar as are the facilities for diagnosis and stone analysis to determine which method is most suitable for each patient. Few patients who have suffered the excruciating discomfort attendant upon repeated urinary stones will be found uncooperative. The combination of analysis, logical therapeutic principles, and cooperation on the part of patients and medical men, will do much to prevent the suffering and resultant loss of functioning renal substance to those afflicted with renal calculous disease.

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PERNICIOUS ANEMIA WITH THE ABSENCE OF TYPICAL ANEMIA

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IT is the purpose of this paper to call attention to the fact that currently one may encounter many cases of neuropathy with achlorhydria without the typical hematological picture of pernicious anemia, whose proper diagnosis and treatment should not be missed because of the absence of characteristic peripheral blood and bone marrow findings. This fact has been mainly brought about since the advent of popular mass consumption of vitamins,(1) especially folic acid and B_{12}, and apparently also antibiotics. There is no doubt that oral intake of folic acid, 5 milligrams daily, effects a hematologic remission while the spinal cord lesions are aggravated in pernicious anemia. It was definitely shown that folic acid requires no intrinsic factor and has a direct action upon the bone marrow, converting a megaloblastic into a normoblastic bone marrow. Vitamin B_{12} plus intrinsic factor, incorporated into a host vitamin preparations on the market, when taken orally tend to suppress megaloblastic erythropoiesis while being insufficeint to cause amelioration of the progression of postero-lateral cord changes for which massive parenteral medication is required. The mechanism of action of penicillin or tetracyn is as yet not with certainty confirmed, but apparently they effect increased intestinal absorption of Vitamin B_{12} by increasing its biosynthesis. Hence in the present era of mass production and widespread ingestion of those medications combined with the relatively high sensitivity and prompt response to them of the hematological apparatus in contradistinction to the resistant neurological system, the number of patients visiting for the first time a physician's office and presenting abnormal neurological manifestations without an abnormal blood picture will become more frequent. Thus a peculiar phenomenon will come to the fore: A disease called pernicious anemia representing itself without anemia. But this is the challenge the physician will have to be faced with today: That not the name, per se, of a disease but rather the disease itself, in all its manifestations, should serve to command proper mobilization of diagnostic skills, has been a not uncommon experience in clinical medicine.

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Suffice it to mention aortic insufficiency and calcification of the ascending aorta with no positive serology for syphilis, or diabetes mellitus without mellituria.

Awareness of dissociation between hematological and neurological improvement was known already(2) in the previous era of liver therapy, when it was noted that subacute combined sclerosis progressed in a patient who had taken inadequate amounts of liver which were enough to bring the red cell count and bone marrow to normal. However, at no time before were serious bodily insults associated with the disease process of pernicious anemia apt to escape diagnosis and treatment as in the present era of antibiotics, folic acid, oral vitamin B_{12} plus intrinsic factor, and parenteral B_{12} inadequately administered, mostly empirically, in a host of conditions; all leading to the more frequent occurence of normal hemopoiesis in cases that happen to be afflicted with pernicious anemia. In addition to the above it appears that many a physician has been overtaken by the textbook picture of a patient who reveals pallor or lemon-yellow tint, weakness and fatigue, palpitation and dyspnea, and even signs of renal or cardiac failure in association with anemia; macrocytosis, hyperchromia, poikilocytosis, Howel-Jelly bodies, basophilic stippling, Gabot's rings; leukopenia with neutrophilic multisegmentation; thrombocytopenia, and a megaloblastic bone marrow. *All of these symptoms and signs associated with anemia, however, including leukopenia and thrombocytopenia, appear to be doomed to play a lesser role in elicitation of a diagnosis of pernicious anemia as compared to subacute combined sclerosis in association with histamine refractory achlorhydria.* The latter sign is of utmost importance because of its resistance(3) to even massive parenteral doses of liver or B_{12} and also because of its being associated steadily with the deficiency of intrinsic factor which is the basic etiological agent responsible for the development of pernicious anemia.

The incidence of subacute combined degeneration of the spinal cord with histamine-resistant achlorhydria in association with other diseases except pernicious anemia is extremely rare,(4) and when encountered can be distinguished on clinical evidence alone. Here may be mentioned sprue(5), diabetes mellitus, pellagra(6) and mainly tapeworm(7) infestation as well as gastric carcinoma(8), post gastrectomy syndrome(9), CA of the colon and strictures of the small bowel or multiple intestinal fistulas.

A question may arise, though, especially in the mind of a thorough investigator, whether there are, in addition to clinical evidence, other procedures that could be successfully employed in order to confirm specifically the diagnosis of pernicious anemia in the absence of anemia. Before an answer to this question can be discussed it is felt worth while to review the physiologic and other changes associated with pernicious anemia.

PHYSIOLOGIC AND OTHER CHANGES IN PERNICIOUS ANEMIA: Castle(10) stated that "the disease would not develop if the patient could effect daily the transport of a millionth of a gram of vitamin B_{12} the distance of a small portion of a millimeter across the intestinal mucosa and into the blood stream. This he cannot do, principally as a result of failure of the stomach to secrete into its lumen some intrinsic factor. The cause of the stomach's failure to secrete the intrinsic factor is not known or idiopathic and hence the name "primary" pernicious anemia.

In human serum vitamin B_{12} consists of two forms, the one which is protein bound, and the free form. In normal subjects the mean total vitamin B_{12} was found to be about 400 millimicrogram, and free vitamin B_{12} about 70 millimicrogram per milliliter of serum; while in a pernicious anemia patient in relapse no free vitamin B_{12} is detected and and total vitamin B_{12} concentration is about 40 millimicrogram per milliliter, or 10% as much as in a normal person. The liver(12) in an untreated pernicious anemia patient contains no vitamin B_{12}, while the liver of a normal person is estimated to carry about 200 microgram of vitamin B_{12}. Gridwood reported that assays of tissues for vitamin B_{12} in patients with pernicious anemia in relapse showed no detectable amount of B_{12}, whereas corresponding normal tissues contained measurable quantities.

The absence of free vitamin B_{12} in the blood and of total vitamin B_{12} in the liver and tissues, and the presence of only one-tenth of normal concentration of total vitamin B_{12} in the serum of a pernicious anemia patient in hematological

relapse, is due to intrinsic factor deficiency in the gastrointestinal tract preventing vitamin B_{12} absorption into the blood stream and causing its loss in the feces.

Normally, following absorption, protein bound vitamin B_{12} rapidly appears in the plasma from which it is transported to various body tissues. Most investigators(14) except Horrigan and Heinle, believe that the factor contained in the serum which exerts a binding effect on vitamin B_{12} shows the same binding capacity in normal as well as in pernicious anemia cases.

Lajtha and associates(15) found that neither B_{12} nor intrinsic factor separately exerted any effect on cultures of bone marrow cells from patients with untreated pernicious anemia, but in combination they stimulated the maturation of the megaloblasts. Serum of normal subjects exerted a similar effect, whereas serum of untreated cases of pernicious anemia had an inhibitory action. If B_{12} was administered parenterally to such patients, their serum stimulated maturation of the cells, like normal serum. Lajtha concluded that B_{12} must have combined with "intrinsic factor" present in the body tissues or fluids in order to have acquired such activity.

Thus it is B_{12} that is low or absent in the serum and tissues of the untreated pernicious anemia patient, but not *"tissue intrinsic factor" which is adequately present* in contrast to "gastric intrinsic factor" which is markedly deficient, and is actually responsible for the disease process. In other words, *intrinsic factor has a dual action: "gastric intrinsic factor" effects absorption of vitamin B_{12}, and "tissue intrinsic factor" makes possible B_{12} action upon megaloblasts in the bone marrow causing their maturation or normoblastic conversion.* It appears that the transformation of thymine to a nucleoside, thymidine, which then enters into the formation of nucleic acids needed for maturation of erythrocytes, is a metabolic function of vitamin B_{12} promoted by the "tissue intrinsic factor." That vitamin B_{12} has a definite neurotrophic effect and is essential in the functional integrity of myelinated nerve fibres of the brain and spinal cord is best witnessed clinically by its relationship to subacute combined sclerosis. The role played by "tissue intrinsic factor" in the latter action has never been investigated, nor has anybody tried to determine vitamin B_{12} concentration in the spinal fluid of normal, treated or untreated pernicious anemia cases.

Normal persons have a total of 1 microgram of B_{12} in circulation; pernicious anemia patients in relapse have one-tenth as much. Within one hour after an intramuscular injection of 40 microgram given to a patient with pernicious anemia in relapse the total of B_{12} in the plasma rises to about 3 microgram and falls within 24 hours to approximately 0.75 microgram. In view of the fact that as much as 34 microgram out of 40 microgram injection is not excreted, it appears that the greater part of the dose is stored in the body outside the plasma and that the plasma concentration in patients with pernicious anemia receiving no further treatment is maintained by drawing upon this store(14). A radioactive tracer employed by Glass revealed hepatic uptake to be several times as high as that of other tissues and hepatic decline to be slower than elsewhere in the body. Vitamin levels in the liver rise to peaks four to six days after injection and five to seven days after oral administration. Two or three months later, 85% of peak values are still demonstrable. *Hepatic storage probably accounts for the long period after deprivation before a deficit ensues,* as well as for delayed onset of macrocytic anemia after total gastrectomy. *In pernicious anemia when therapy is stopped it has been reported*(17) *that hematological relapse may not occur for as long as* 3 *years.* The daily human requirement is not more than 1 microgram a day, or less than 0.5 milligram a year. Vitamin B_{12} liver stores in a patient who has had a total gastrectomy may be sufficient for his needs for several years. Poulson and Harvey in studying the effects of total gastrectomy on erythropoiesis in 27 patients, at varying intervals over a decade, found macrocytosis to occur within one or two years after operation, and if the patients lived long enough they developed anemia and still later a megaloblastic bone marrow and, as one of this group did, subacute combined sclerosis. One of their patients also showed signs of jejunal atrophy not unlike gastric atrophy seen in primary pernicous anemia.

In primary pernicious anemia there is a true decrease in the thickness of the mucosa of the fundus(19). The glandular tubules are altered and greatly decreased in number, and tubular epithelium is also strikingly altered. Parietal and peptic cells are rare or absent. There is an increase in interstitial tissue. Atrophy of the sub-

mucosa and muscularis has also been noted. Some areas of the gastric mucous membrane may assume microscopic characteristics typical of the small intestine. No atrophy in either the pyloric region of duodenum is noted. The argentaffine cells are absent. There is increased frequency of both benign and malignant tumors of the stomach. Closely related to the histopathologic changes are the macroscopic findings. Henning, in his monograph, described diffuse atrophy of the entire gastric mucosa with a grayish yellow to grayish green color, especially when the stomach was well inflated on gastroscopic examination. The "sharp outline of distinct fine and coarse blood vessels" could be seen arching over the wall. Schindler(20) did not find invariably complete diffuse atrophy but rather patchy gray areas of atrophy between areas of normal or only very slightly superficially inflamed mucosa. Following treatment with liver or B_{12} the mucosa may be restored in variable degree to a normal gastroscopic appearance, but whether this represents a restitution to histologically normal mucosa has not been demonstrated.

Biochemical changes observed during early remission induced by vitamin B_{12} include the production of positive nitrogen balance (21) of as much as six grams daily and elevation of the serum uric acid and an increase in urinary excretion of uric acid(22). During the peak of reticulocyte response to initiation of B_{12} therapy there is also an increased phosphorus excretion in the urine. These changes may be related to changes in nucleoprotein metabolism which accompany alteration of a megaloblastic to a normoblastic bone marrow. The iron content of the serum as well as urinary excretion of coproporphyrin I which are high during relapse, return to normal during remission(23). Changes in serum cholesterol and blood sugar has also been noted. The improvement induced in combined degeneration of the cord is believed to be due to vitamin B_{12}'s neurotrophic action and possibly its role in protein (21) and lipoid(24) metabolism causing reversal of early lesions in the nervous system. There is presumably a stage when the lesions are reversible when myelin is degenerating but axis cylinders are intact. Improvement is also due to greater use of unaffected pathways following arrest of lesions in the nervous system. In the peripheral nerves even destruction of axis cylinders is no bar to recovery, for new axons may grow down, or regeneration may occur.

SPECIFIC TESTS FOR PERNICIOUS ANEMIA WITHOUT TYPICAL ANEMIA: In searching for tests that would specifically prove the diagnosis of pernicious anemia in the absence of anemia, I have come to the conclusion that one must be aware of three-groups of findings associated with this disorder.

To the first group belong "tissue intrinsic factor" which apparently is present in the same concentration in the tissues and blood of healthy subjects and of pernicious anemia patients regardless of the hematological status (15). Here may also be included the *agent responsible for the binding capacity of the serum for vitamin* B_{12}. The estimation of these two factors, therefore, appears to carry no diagnostic value at the present state of our knowledge.

To the second group belong findings which parallel the morphologic changes in the peripheral blood and bone marrow; i.e. during hematologic relapse the concentration of *total and free vitamin* B_{12} *in the serum* is abnormal while during hematologic remission it is normal. Thus nothing will be gained diagnostically by estimating, with the Euglena gracilis var. bacillaris microbiological assay method, the concentration of total and free vitamin B_{12} in the serum of a pernicious anemia patient presenting no anemia. To this group also belong findings of *vitamin* B_{12} *concentration in the tissues* as well as *in the liver*. These findings, like the blood picture, will appear to be within normal limits in spite of the fact that the nerve lesions are progressing due to activity of the disease process. Findings of gastroscopic examination can also be included in this second group; for it is only during hematologic relapse that the gastrocopic picture is specific for this malady but not invariably during hematologic remission. Following liver(25) or vitamin B_{12} therapy, in some patients no improvement of the gross atrophic changes of the stomach mucosa is noted, in others it is partially improved, while in many patients the gastroscopic appearance of the mucosa is restored entirely to normal. The fact that in the latter cases there is apparently no definite proof of histological restitution — as pointed out by A. J. Cox who felt that the changes occasionally observed by the gastroscopist after treatment may be due only to the growth of replacement epithelium, or by Schindler who attributed the return of the normal gastroscopic picture, including the disap-

pearance of the visible blood vessels after B_{12} or liver extract to either a regeneration of the chief cells or to the formation of some unknown opaque nonspecific tissue element—still does not make one eliminate this diagnostic procedure from the second group in view of the gastroscopic findings.

The third group includes findings which are permanently and unconditionally elicited in pernicious anemia patients. Those findings are refractory to any known drug, and a state of maintained hematologic remission does not alter their abnormal condition as it does to the findings of the second group. To this group belong the findings of *histamine-resistant achlorhydria* and of marked *deficiency of "gastric intrinsic factor."* The first procedure is very popular and easily carried out. The estimation of the "gastric intrinsic factor" however, has met with great difficulties.

Castle's(10) classic bioassay consisting of feeding extrinsic factor, in form of beef muscle, mixed with gastric juice of an undiagnosed patient to a known pernicious anemia patient in hematologic relapse, and according to the response of the known pernicious anemia patient's hematologic system to judge about the status of the "gastric intrinsic factor" in the undiagnosed patient, is a very complicated and impractical procedure. This method has been known for 25 years, and needless to say it has rarely been put into practice.

Lately, a new approach has been developed *which indirectly measures* the presence or absence of sufficient gastrointestinal intrinsic factor. Radioactive cobalt incorporated in vitamin B_{12} when given orally to the pernicious anemia patient can be recovered in large part in the feces. Heinle and his associates(28) were the first to administer vitamin B_{12} labeled with radioactive cobalt 60 orally, to normal subjects and to patients with pernicious anemia. The amount of radioactivity which appeared in the feces was greater in patients with pernicious anemia than in normal subjects, but could be decreased by administration of a source of intrinsic factor in conjunction with the labeled vitamin. Halsted et ac. (29) measured fecal excretion of cobalt 60 — labeled vitamin B_{12} with a scintillation counter. They found that eleven normal persons excreted on the average 33 per cent of 0.5 microgram of orally administered radioactive vitamin B_{12}, while seven patients with pernicious anemia excreted, on the average 93 per cent in 10 tests, but when a source of intrinsic factor was administered with the test done in 4 patients, fecal excretion was decreased to an average of 38 per cent. More interesting was the finding that 11 patients who had had total gastrectomy, none of whom had macrocytic anemia, excreted on the average 87 per cent in 16 tests. When a source of intrinsic factor was administered with the test dose, an average of only 20 per cent was excreted in 14 tests.

At this point it should be mentioned that Rubin and Massey(30) noted a typical appearance of the exfoliated cellular material from the stomach of patients with pernicious anemia persisting despite prolonged therapy. However, this approach is still in the investigative stage. Also in the investigative stage is the interesting observation of Olmstead and Hirschboeck(31) who found low urorennin levels in the urine of 50 pernicious anemia patients even in hematologic remission. They assumed that the low excretion of uronennin resulted from the low rennin and pepsin activity of the gastric secretions in pernicious anemia. However, this finding is not specific for pernicious anemia but rather a manifestation of atrophy of the gastric mucosa which also occurs without pernicious anemia.

It appears that radioactive cobalt incorporated in vitamin B_{12} would be the most useful and most practical adjunct in the diagnosis of pernicious anemia without anemia, as it measures, indirectly, the gastrointestinal intrinsic factor deficiency. Its importance will still be greater when it will be applied to every case of histamine refractory achlorhydria, even prior to the onset of clinical manifestations of neuropathy; and when signs of deficiency of gastric intrinsic factor would be elicited, therapy could be undertaken prophylactically. A day will come when its use will be widespread, but until then it still remains that *in the absence of anemia, the clinical findings of subacute sclerosis in association with histamine-resistant achlorhydria plus response to therapy* are the only practical means of establishing a diagnosis of pernicious anemia.

CASE REPORTS: Two cases that presented subacute combined sclerosis with histamine-resistant achlorhydria without typical erythropoiesis of pernicious anemia are reported here:

CASE 1. M. M., 38 years old, white female, visited me in my office for the first time in November, 1951, complaining of "a back condition."

She stated that 6 years previously, after the confinement with her second child, she lifted the older child and the next day had a severe low back pain. Since then she had worn a brace on and off when she felt that her back became tired. On several occasions she went to a physician for general checkups, including blood counts, but except for the sprained back nothing of significance was found. She was advised to take vitamins, which she had been taking all the time.

About three months previously she felt extremely weak in her back and legs, and she had to drag her legs along when walking. During her office visit she complained of numbness, chiefly on the right side, but no radiating pain. She denied any gastric upsets, but stated that 2½ years previously her tongue had become swollen, and ever since then "the skin had come off the tongue," and she has had a soreness of her tongue.

The patient's family history was noncontributory. On examination she was a well developed and well nourished, right handed, young looking woman, wearing a body cast. Her general examination was negative. She appeared to have good color, but her tongue was definitely smooth and without any demonstrable papillae. Neurologically she showed possible slight general weakness of her musculature, especially in her lower extremity. No localized atrophies or muscular deficits were demonstrable. Reflex examination revealed upper abdominals present, lower abdominals absent; the knee jerks were exaggerated bilaterally; the ankle jerks showed an active response on the left side, a somewhat diminished ankle jerk on the right. Sensory examination to ordinary modalities revealed diminished pinprick perception in the distribution of the right external cutaneous nerve. Vibratory and position sense were definitely impaired, although not lost in the feet and toes. Plantar stimulation revealed poor planter flexion bilaterally though no true Babinski could be demonstrated. The soles of her feet were unusually sensitive.

Gastric analysis revealed histamine fast achlorhydria. Complete blood count was normal.

She was referred to a hematologist for bone barrow studies. However, after finding a normal peripheral blood, the hematologist felt there was no need to do a bone marrow smear. I subjected this patient to massive parental doses of B_{12} twice weekly; it took about 3-5 months until a noticeable symptomic improvement was noted. After six months there were definite signs of neurological improvement except for vibratory sense.

Patient continued on maintenance parenteral B_{12} up until 2 years ago, when she was referred to another internist (because I joined the V.A.) who discontinued those treatments for 3 months in order for her to undergo bone marrow studies by a hematologist. When the latter discovered a normal bone marrow smear, his dictum was that patient had no pernicous anemia and he strongly urged her to give up gunshot therapy. However, her condition deteriorated and she had to resort back to B_{12} injections, with good results. She has been on a maintenance regimen since.

CASE 2. W.D.P. This was a 71 year old white male who was admitted to the Veterans Administration Hospital, Whipple, Arizona, on July 13, 1953, complaining of numbness and tingling, mainly in the extremities, of about 3 years duration; and of walking difficulties of about 2 years duration. He stated that his legs felt weak and he sometimes could not control them. For fear that he might get off balance he walked no more than 1½ blocks. He also stated that he had had anemia for some years, the cause of which could not be determined, and that was also his main reason for seeking hospitalization.

Past history consisted of an appendectomy and herniorrhaphy many years previously. Since 1925 he had had bronchial asthma and bronchitis. He stated that in 1939 he had a peptic ulcer and recovered fully after one year's therapy with diet, amphojel and discontinuation of smoking. In 1947 he was treated at a hospital in Los Angeles, California, for unresolved pneumonia, at which time about 200 penicillin injections were administered.

He was hospitalized again in Los Angeles, in 1951 because of an acute abdominal episode which was thought to be a duodenal ulcer perforation, but which upon laparotomy showed a well healed ulcer in the anterior portion of the duodenum and moderate induration of the pancreas with small punctate nodules on the surface of the mesentery associated with a small amount of fat necrosis. A diagnosis of interstitial pancreatitis was made, and no additional procedures were performed.

His third hospitalization at the same hospital in Los Angeles in February, 1952, occurred at the suggestion of his private physician, because of "an anemia". The patient's anemia on the outside was never diagnosed by laboratory tests, but rather by history from his family physician. On admission his hemoglobin was 7 gms. and red cells 3.5 million, and hematocrit was 26. He was given blood transfusions and vitamin therapy and ferrous sulfate. Following the 15th day of hospitalization he showed uric acid of 10.6 mg.%; cephalin flocculation was 2 plus in 48 hours, thymol turbidity was 9.1 units, and bromsulfalein showed 2.4% dye at 45 minutes. Cholecystogram on admission showed a non-functioning gallbladder. Several weeks later his blood count and cholecystogram were found to be normal. He was discharged from there with diagnoses of: (1) Anemia, etiology unknown. (2) Hyperuricemia, etiology unknown. (3) Hepatic parenchymal disease. The additional diagnoses were: Small ventral hernia and benign prostatic hypertrophy.

Physical examination on admission to Veterans Administration Center, Whipple, revealed a well developed, well nourished white male of 71, who appeared in no acute distress. He appeared mentally clear and cooperative. Positive findings consisted of: Arcus senilis. Tongue was partially deprived of papillae; the anterior part was smooth and beefy red. There was tenderness in the region of the 6th and 10th ribs. Postoperative scar noted in the left chest region. Moist rales were elicited at both lower lung bases posteriorly. The right lung appeared to be more emphysematous than the left one. The point of maximum apical impulse was in the 5th interspace, one finger breadth beyond the midclavicular line. There was a soft apical systolic murmur, not transmitted to the axilla. P_2 was greater than A_2. Postoperative scars were noted over upper abdomen and bilateral inguinal regions. Pedal pulsations not elicited but extremities felt warm and oscillometric readings normal. The neurological examination revealed reflex changes. The knee jerks were slightly hyperactive. The ankle jerks were absent. Babinski and Oppenheim were positive. There was moderate ataxia, demonstrated on finger to nose and heel to knee tests. A moderately coarse tremor of the extended hands was noticed. The vibratory sense was moderately diminished over the lower extremities. The sensory changes were mainly subjective, consisting of dysesthesias and paresthesias involving not only the four extremities but to a lesser degree the entire body.

LABORATORY: July 13, 1953. Red blood count 3,200,000. Hemoglobin 8.9 grams. Hematocrit 32 mm. White blood count 10,500; Neutrophils 68, lymphocytes 28, monocytes 4, band cells 2. Platelets 275,000. Bone marrow aspiration showed 1 myeloblast; 30 myelocytes neutrophils; 1 myelocyte-eosinophil; 17 meta-myelocytes-neutrophils; 19 P.M.N. neutrophils; 2 lymphocytes; 1 monocyte; 3 megaloblasts; 26 normoblasts. M-E ratio 71-29. Cells counted 200. Sedimentation rate 22mm. Blood urea 17 mg.%. Glucose fasting 97 mg.%. Serum bilirubin 0.53 mg.%. Serum uric acid 4.8 mg.%. Urinalysis Color, yellow; reaction acid; specific gravity 1.014; albumin and sugar negative; bile negative 3-5 hyaline casts; rare white blood cell. Urine urobilinogen negative. Serology negative. Cephalin flocculation 3 plus in 24 hours and 4 plus in 48 hours. Bromsulfalein 8% retained in 45 minutes. ree hydrochloric acid absent with histaminc. Stools negative for ova, parasites; trace of fat; no meat fibres. Bleeding time 1 minute. Coagulation time 5 minutes. Coombs test negative. Red cell fragility test normal. Blood culture showed no growth in 16 days. eRticulocyte counts during August ranging between 3.4 to 4.7 per cent, and on September 24, 1953, 6.7 per cent. Complete blood count on October 21, 1953, revealed 5,370,000 red blood cells. Hemoglobin 14.9 grams. Hematocrit 53 mm. Cephalin flocculation was 4 plus in 48 hours. Alaline phosphatase 10 units. Thymol turbidity less than 1 unit and bromsulfalein 5% retained in 45 minutes. Total protein 6.8; albumin 3.7; globulin 3.1. Electrocardiogram was within normal limits. X-ray of chest revealed that the left 6th rib was partially resected and there was considerable fibrosis in the left mid lung field. The apex of the left lung was emphysematous. The heart was shifted to the left and there were pleural pericardial adhesions along the left heart border. There was compensatory emphysema of the right lung. There appeared to be an old healed fracture of the left 10th rib. The heart size was within normal limits. Barium enema yielded no abnormal findings. GI series showed clover leaf deformity of the duodenal bulb and diverticulum of the second portion of the duodenum. Contrast material concentrated well in the gallbladder, which showed no evi-

dence of stones and appeared to empty satisfactorily. A mared sclerosis of the abdominal aorta was noted. Examination of the esophagus showed no evidence of varices. X-ray of the spine showed hypertrophic osteoarthropathy of the cervical and dorsal spine.

COURSE IN THE HOSPITAL: Even though the patient revealed no typical P.A. bone marrow; no marked megaloblastosis or giant metamyelocytes; and no characteristic changes of pernicious anemia in the peripheral blood picture, he was treated as a pernicious anemia case with B_{12} and liver injections and the results had been good. In December, 1953, patient was found to walk much better, had much less ataxia, and showed increase in general strngth and vigor. His dysesthesias and paresthesias improved greatly although reflex changes persisted. One month later patient revealed excellent coordination and stated that he felt much stronger in his legs and was able to walk for many blocks. Numbness and tingling had gone entirely. When he was sent on a therapeutic trial visit for a longer period of time and was off parenteral and only on oral medication of B_{12} plus intrinsic factor his neurological condition definitely deteriorated while the hematological remission persisted.

COMMENT: The first patient had taken vitamin preparations containing B_{12} and folic acid for several yaers. She presented subacute combined sclerosis and histamine resistant achlorhydria and glossitis, and at no time anemia. Undoubtedly her back sprain "masked" to some degree the subacute combined sclerosis and the absence of anemia "preventd" the diagnosis of pernicious anemia.

The second patient had on several occasions been subjected to prolonged antibiotic therapy and had taken vitamin preparation on and off until one year prior to his last hospitalization. He showed anemia but no bone marrow characteristic for pernicious anemia. Since the attack of acute pancreatitis in 1951 he has at no time thereafter revealed symptoms or signs compatible with pancreatitis: serum amylase, urine diastase, glucose tolerance curve, stool for meat fibres and the clinical findings all disproved pancreatitis. The abnormal liver function tests pointed to hepatocellular damage, which is not uncommon in pernicious anemia. So did Schilling and Harris(32) report that the bromsulfalein retention exceeded 5% in 45 minutes, and cephalin flocculation was 3 plus in 48 hours in 3 of 20 patients with pernicious anemia. Alkaline phosphatase was elevated in only one patient; and total serum protein concentrations were lower than the accepted range in all of their 20 patints. So also did this patient reveal a nonfunctioning gallbladder concomitant with the anemia in 1952, which then reverted to normal following blood transfusions and hematological remission. This is in accord with the report of Lindquist(33) who found that oral cholecystography failed to outline the gallbladder in 16 of 33 patients with pernicious anemia in relapse; repetition of the test in 12 of those patients after hematological remission had been induced showed definite visualization of the gallbladder in eight. Because of liver damage, arteriosclerosis, chronic bronchitis and emphysema in this patient reticulocytosis following massive B_{12} and liver injections was markedly delayed. The most interesting feature about this patient is the history of a duodenal ulcer. It proves that one may develop pernicious anemia following a peptic ulcer if the latter heals and hyperchlorhydria is substituted by histamine refractory achlorhydria. Absolutely true appears to be the reverse, namely that one who has pernicious anemia can hardly ever get a peptic ulcer because the histamine resistant achlorhydria of pernicious anemia is unconditionally permanent, and there can be no active peptic ulcer with achlorhydria.

SUMMARY: The increase in incidence of primary pernicious anemia without anemia because of ingestion of folic acid, vitamin B_{12} plus intrinsic factor incorporated into vitamin preparations on the market, increased parenteral administration of vitamin B_{12} in a host of conditions, and possibly because of antibiotics is stressed.

Subacute combined sclerosis in association with histamine resistant achlorhydria is rarely encountered in any other condition but pernicious anemia, and the differential diagnosis can, almost always, be established on the basis of clinical evidence alone.

Physiological and other changes associated with pernicious anemia are reviewed. The *findings common in pernicious anemia are classified into three groups on the basis of their diagnostic value especially in a state of morphologically normal peripheral blood and bone marrow.* Histamine resistant achlorhydria and deficiency of gastric intrinsic factor because they are uncon-

ditionally permanent findings in pernicious anemia and not influenced by hematological, or any other, remission, when demonstrated, specifically confirm the diagnosis.

The importance of radioactive cobalt labeled vitamin B_{12} as a diagnostic aid and its utilization as a preventative tool for pernicious anemia neuropathy in the future is suggested.

Two cases of pernicious enamia without typical erythropoiesis are reported. The delay of proper diagnosis and treatment in the face of absence of characteristic hematological findings while serious neurological lesions were progressing, is described. The second case, in addition is more intriguing as he proves that pernicious anemia may follow a peptic ulcer when the latter turns inactive and histamine-fast achlorhydria substitutes for hyperchlorhydria.

ADDENDUM: Since preparation of this paper one more case of postero-lateral sclerosis and histamine-refractory achlorhydria with a normal hematological picture was treated at the Medical Services of V.A.H. Whipple, with parenteral B_{12} with mared clinical improvement.

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THE GONORRHEA PROBLEM IN ARIZONA

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OCCASIONALLY a communicable disease which seems to be under control, or nearing control, flares up and we suddenly find we have a problem on our hands. This is true of gonorrhea. For the past several years the gonorrhea attack rates, as reflected by cases reported to the State Department of Health, have remained more or less steady. If a trend is to be noticed over the years, it would be slightly downward.

Suddenly, last July the gonorrhea cases reported began to increase. This, in itself, was not alarming as very often there is a sudden increase in cases of venereal disease reported, usually followed by a period of decreased activity. However, in this instance, the expected decrease has not materialized. Instead of decreasing, the reported cases of gonorrhea have continued to increase. This increase is shown by comparing the total number of cases reported in 1954 with those reported in 1953; there was an increase in 1954 of 50%.

This increase was not limited to any one area, but rather there was an obvious increase throughout the state. The trend established in 1954 has continued. During the first six months of 1955 a total of 490 more cases of gonorrhea has been reported than during the same period last year; an increase of 54 percent.

What is the meaning of this increase? Does it actually mean that there is a serious epidemic of gonorrhea, or can it be explained in some other way? First of all, could this increase be due to the more exact reporting of cases of gonorrhea by the physician rather than an actual increase in the number of cases detected? This might be true if only the private physician were involved, but the number of cases reported by local health units, hospitals and other institutions also increased. It is true that a number of physicians reported cases of gonorrhea for the first time in 1954. However, physicians who regularly report, generally reported more cases in 1954 than during 1953. Then too, no concentrated drive to get physicians to report cases of venereal disease had been carried out during the past year.

Second: Arizona is a growing state. Could this upward spiral of cases reported be merely the result of an increased population? The population of the state increased between 5 and 10 percent during 1954, while the gonorrhea cases reported increased 50%. This population increase hardly seems to be the answer.

Third: During the political campaign last summer and fall, Arizona's unfavorable health picture with its high venereal disease rates was explained to some extent in the campaign. Has this publicity made the population and the physician more venereal disease conscious, which has resulted in more people seeking treatment and being treated for gonorrhea? This could be true, although this same situation was publicized in other political campaigns without any increase in venereal disease being reported to the State Department of Health. If this supposition were correct, it would have resulted in an increase in the cases of syphilis reported too. However, this is not the case. The number of syphilis cases reported have actually gone down, not up, during this period.

The fourth supposition would be that there has actually been an increase in promiscuity which would naturally result in an increase in venereal diseases. There is a great deal of evidence to support this theory. First, one would not expect much change in the sex habits of those in the older age groups. They should be well established by the time the individual reaches 20 to 25 years of age. Therefore, any general increase in promiscuity should be detected first in the younger ages.

A comparison of the age distribution of gonorrhea cases reported during 1953 and 1954 shows that while there has been an increase in the cases reported for practically every age, the increase in the younger ages is more marked. In 1953 the median age of cases of gonorrhea reported was 22 years. In 1954 this age was 20 years. This is all the more remarkable when one considers that there are many physicians who are reluctant to report venereal disease among teen-agers.

A second indication that more teen-agers are contracting gonorrhea is that during the past six months several physicians have called the state and local health units because they have become

alarmed about this situation. This concern is something that had rarely happened before.

A fifth supposition that might account for our present situation is that we have not been able to reduce the female reservoir of gonorrhea patients, or prevent it from increasing. The technique used to reduce this reservoir or keep it in check is the interviewing of male cases of gonorrhea for their sexual contacts and then the tracing of these contacts and bringing them to diagnosis. It might be that we are failing to get the cases which are doing the damage, in spite of the fact that we have had more and better contact investigation the past year than in previous years.

Whatever the reason, the fact is we seem to have a sustained epidemic of gonorrhea. What can be done about it? There are several things that the private physician may do to help:

1. Interview all male cases of gonorrhea for their sexual contacts.
   (a) If the patient is married, do not treat the husband unless sure that the wife is treated at approximately the same time.
   (b) Report all contacts solicited to your local health unit if in Pima, Pinal or Maricopa Counties, or to the State Health Department if not in the above mentioned counties. These contacts will be traced and brought to diagnosis and treatment if it is necessary.
2. If the physician does not have time to interview the patient and the patient lives in Pima, Pinal or Maricopa County, a call to the local health unit will bring a trained investigator to do the job.
3. Treat all female contacts of known male cases whether or not the gonococcus can be demonstrated by laboratory procedures. It is sometimes very difficult to demonstrate gonorrheal infection in old chronic cervicitis cases; yet they are extremely infectious. These cases need not be reported unless the physician has convinced himself either through clinical or laboratory procedures that the person has gonorrhea. Neither does this person need be known as a case of venereal disease. However, if they are treated a case of infectious gonorrhea may have been treated and the spread of infection to others prevented.
4. Report all cases of known gonorrhea to the State Health Department. This will give us an idea of the actual prevalence of the disease and point up areas that need special treatment.

Next, what does this epidemic of gonorrhea mean as far as other venereal diseases are concerned? Why have not the syphilis cases kept pace with the gonorrhea cases reported? If there is an increase in promiscuity, then there should be an increase in syphilis cases also. It is estimated that about five percent of those who contract gonorrhea contract syphilis at the same time. It appears that we are not even finding these cases. Are gonorrhea patients returning monthly for four months after treatment for a blood test and examination? Does the physician in treating his gonorrhea patient give him enough penicillin to cure him of any syphilis he may have acquired at the same time? Or does he give him enough to take care of the gonorrhea and only mask the early symptoms of syphilis, but not cure it? All these questions can only be answered by the physician himself. However, the fact remains that suspicion of syphilis should be considerably sharpened in the mind of any physician who is treating cases of gonorrhea.

There are still several foci of spyhilitic infection in the state which have not been wiped out. We are still receiving a considerable number of reports of infectious syphilis which indicates that there is enough syphilis in the state so a promiscous person need not hunt too long to find it.

Health authorities have the uneasy feeling that maybe many physicians in the state believe that the syphilis problem is solved and there is no further need to try and diagnose it. It is hoped that this is not true. We hope that the present downward trend in cases of syphilis reported is actually a true decline in the incidence of this disease and that it might soon cease to be a public health problem in Arizona.



PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL NUMBER 37521

PRESENTATION OF CASE

A FIFTEEN-month-old girl was admitted to the hospital because of jaundice.

One month prior to admission while cutting the bicuspids the child developed bilateral swelling under the chin, low-grade fever and some reddening of the right eardrum. She was treated with ear drops and a sulfonamide compound for three days, with subsidence of the symptoms. At about this time she was observed to be scratching her skin a great deal but otherwise appeared well. No jaundice was noted Six days prior to admission a red blotchy rash developed over her neck and face. She was afebrile. At this time the mother noticed that the sclerae had a yellowish tint and that the abdomen was becoming larger. In the following two days there was a rapid increase in jaundice. The patient's appetite during this period seemed to improve, and she was quite active. Two days prior to admission she was seen by a physician and placed on skimmed milk. Thereafter the stools, which previously had been somewhat loose but of normal color, became hard, pale and infrequent. No stools were noted on the day before admission.

The child had had a normal birth and neonatal period, with a birth weight of 6 pounds and 3½ ounces. The pregnancy had been uncomplicated. She had been breast fed for two weeks and then switched to a whole-milk and Karo Syrup formula and at about one year chopped foods were added to the diet. She received oleum percomorphum, 10 drops, until the age of thirteen months. She was immunized against diphtheria, pertussis and typhoid between her sixth and eighth months but was not vaccinated. For one month following the loss of the cord stump there was recurrent discharge at the umbilical site, which healed after treatment by repeated cauterizations.

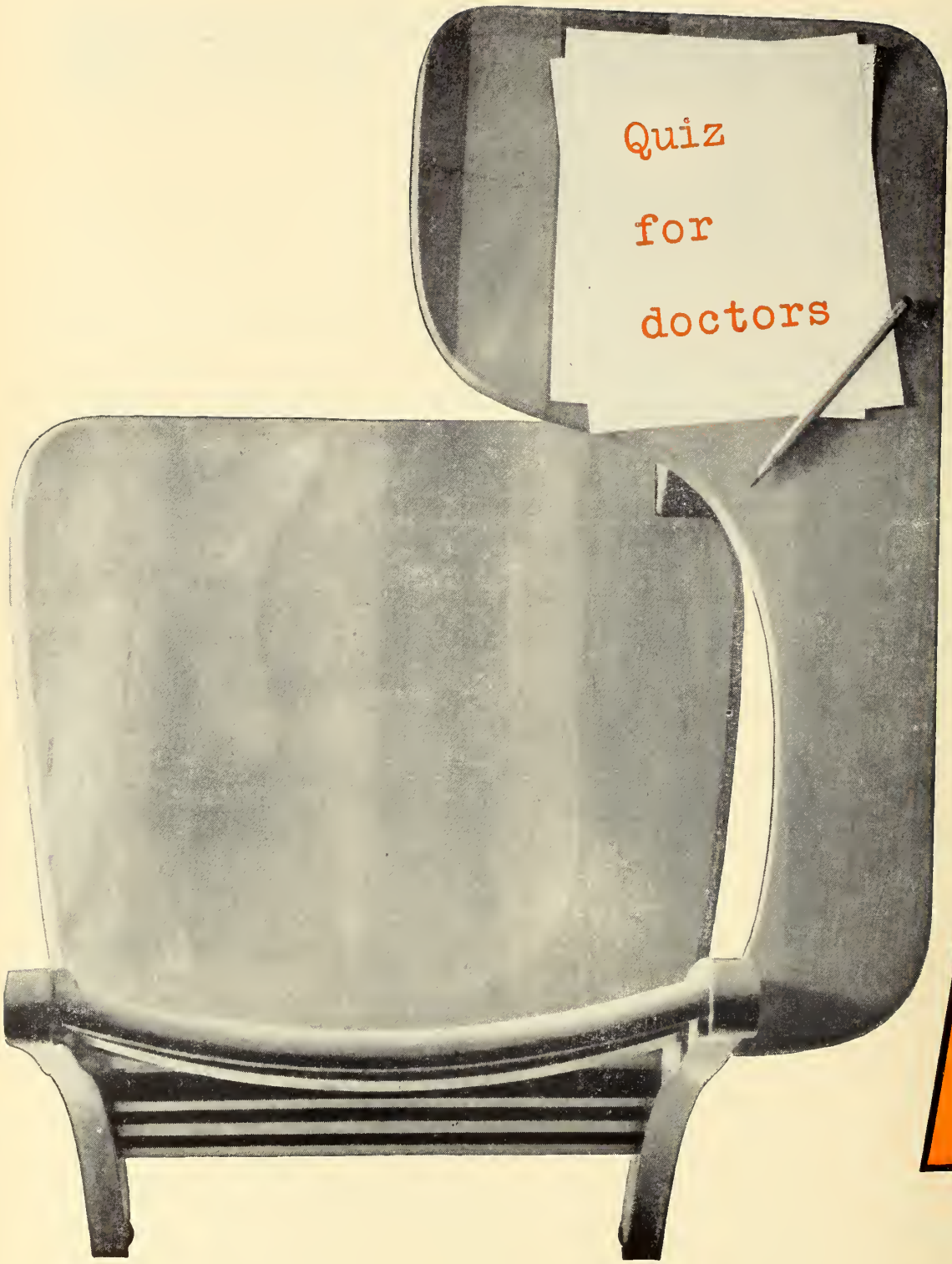
Physical examination revealed a 29 inch, 23-lb., well developed jaundiced child who was listless and irritable. The sclerae were yellow tinged. The skin was distinctly yellow with a few faint red macules at the upper chest. The pharynx was negative. The lungs were clear. The heart was of normal size with a Grade II apical systolic blowing murmur that was not transmitted. The abdomen was proturberant and a firm, smooth, nontender, 14x19 cm. mass was felt in the right upper quadrant that extended to the left of the midline. The mass extended into the right flank posteriorly and apparently occupied almost the entire right side of the abdomen. It was thought to be separate from the liver, which could be felt 2 finger breaths below the costal margin and had a sharp nontender edge. The spleen was not felt. No fluid was noted.

The temperature was 98.4°F., the pulse 116 and the respirations 48.

The urine gave a test ++ for albumin and a + test for bile; the sediment contained an occasional red cell and hyaline cast and 50 white cells per high-power field. Examination of the blood revealed a hemoglobin of 10.9 per cent lymphocytes and 5 per cent monocytes. On smear the red cells varied in size and there were many target cells and a rare stippled cetl. The prothrombin with 16 seconds, (normal 19.5 seconds).

X-ray films of the chest revealed clear lung fields with diaphragms elevated by a large intra-abdominal mass. Abdominal films showed a large soft-tissue mass present in the right side of the abdomen that had displaced the stomach and small and large intestime to the left. The mass was smoothly rounded and could not be separated from the liver shadow but could be separated from the kidneys, which appeared of normal size. Intravenous pyelogram showed the dye to be well concentrated, outlining nondilated urinary passages on both sides. There was a suggestion of a small amount of fluid in the peritoneal cavity.

The patient passed several clay-colored stools while in the hospital. Her condition remained



A

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unchanged. She refused almost all food other than milk. On the third hospital day an operation was performed.

Dr. ROGER F. WHITE: This case presents so many conflicting and apparently contradictory aspects that I suspect the diagnosis must be a very simple one. Drs. Dysart and Randolph have covered the range of diagnostic possibilities very well; however, I will probably venture a third diagnostic possibility if I do not lose my courage as I work my way through this impromptu discussion.

The history of recurrent discharge at the umbilicus warrants consideration. Perhaps this was a manifestation of a patent urachus or a persistent vitelline duct. Such lesions, if they become cystic, rarely ever attain such a size as the mass reported in this case, and in any event would tend to be lower in the abdomen and more in the midline.

I do not believe that this mass represents a renal tumor. It is hard for me to conceive of a renal tumor of this size that would not have produced cachexia or manifested itself by an abnormal excretory urogram.

A neuroblastoma could present itself as the mass described in this case. It is just about the only tumor of childhood which could have attained such size in such a short period of time. However, if this were a neuroblastoma, I would again expect some cachexia, displacement of the kidney on the side affected, and some irregularity or nodularity of the mass.

It seems to me that the most salient feature in this case is the presence of jaundice and rather clear-cut clinical and laboratory evidence of obstructive jaundice. What sort of a lesion could produce both jaundice and an abdominal mass such as described? The mass is described as being firm and smooth, separate from the liver edge anteriorally but not in the lateral aspect. I suspect that the mass is due to a cystic dilation of the extrahepatic biliary duct system. The reason for the sudden appearance of this mass must be due to recent and acute obstruction. Whether this obstruction was due to torsion of a mass about the duct system or due to occlusion by a stone or a plug of inspissated bile is not at all clear. It would be very interesting to know whether this child had a chronic hemolytic anemia of the Cooley type; the report of many target cells in the peripheral smear cannot be ignored.

I have been asked to discuss this case extemporaneously, and I assume that such a request implies that I commit myself to a definitive diagnosis. I will submit that at surgery the operative findings revealed a cystic dilatation of the common bile duct or choledochus cyst.

DIFFERENTIAL DIAGNOSIS

Dr. CLAUDE E. WELCH: When I received this protocol several days ago I gave it to my twelve-year-old son to read over. I wondered if he could help me with the diagnosis inasmuch as he gets all his mdical information from the Reader's Digest. I asked, "What do you think it to be?" He said, "It is a cyst." I said, "What is in the right upper quadrant?" He replied, "The bile ducts." With that as a preliminary diagnosis I shall consider the possibility of a congenital cyst of the bile ducts, which is one of the commonest causes of these particular symptoms.

The history was not very characteristic or informative until just before the patient came into the hospital. The jaundice of six days' duration obviously had come on rather rapidly because nothing had been noted previously except a slight amount of scratching which suggested a low-grade jaundice. Although the presence of a previous acute infection and the sulfonamides are of interest, I do not think they are important to our discussion. Then the abdominal mass became apparent and there were clay-colored stools. The examination in the hospital gave objective evidence of jaundice and began to localize the disease. There was nothing remarkable in the past history. There was no suggestion of a chronic wasting disease. The child was well and her weight was approximately normal. She entered the hospital with a firm smooth non-tender mass in the right upper quadrant that extended across to the left side. The description of this mass is extremely important. I do not think I can expand on it as it obviously was described very carefully. There was no fever. The blood count was not too remarkable for a child of this age — that is, it certainly was not diagnostic. Except for the bile in the urine there was little evidence other than that the child was sick.

Dr. BENJAMIN CASTLEMAN: Here is a drawing of the mass made by the resident.

Dr. WELCH: In this drawing a large mass is shown extending down below the umbilicus, half-way over to the left hypochondrium and halfway down to the inguinal ligament and ap-

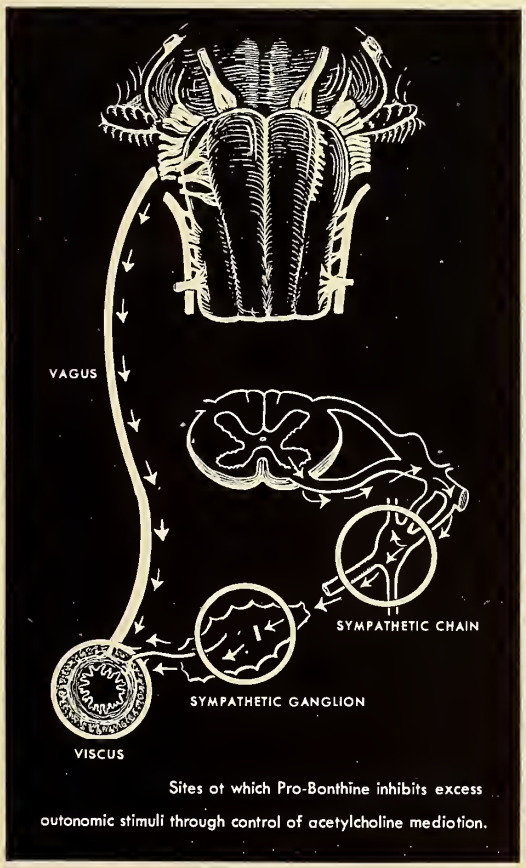
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1. Schwartz I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.

2. Roback, R. A., and Beal, J. M.: Gastroenterology *25*:24 (Sept.) 1953.

SEARLE

parently lying all anteriorly rather than posteriorly.

Being faced than with an abdominal mass in a child a litle over a year old, I have three major possibilities to consider. One is the presence of some maglinant tumor of which an embryoma of the kidney is the most common. There are other malignant tumors that I shall also have to consider. The second and third most common diagnoses are congenital cyst of the biliary tree and duplications of the intestinal tract — in this area particularly of the duodenum. With these three possibilities in mind, let us see the x-ray films.

Dr. JAMES J. McCORT: The palpable soft-tissue mass is seen filling almost the entire right abdomen and displacing the intestines to the left and downward. It is smooth in outline, lying somewhat anteriorly as described in the physical examination, and shows no calcification. Also it seems to be separate from the liver edge laterally, but anteriorly I cannot separate it from the shadow of the liver. A film of the abdomen was obtained in the lateral decubitus position to see if the mass would fall away from the edge of the liver and if there was any layering of fat within it. Neither of these was found.

On intravenous pyelogram the kidneys are normal in size, position and shape; they excreted the dye promptly and there was no obstruction to either urinary passage. The mass is entirely separate from the urinary track.

Dr. WELCH: There was no drink of barium I presume?

Dr. McCORT: NO.

Dr. WELCH: The x-ray findings are very helpful, particularly from the point of view of excluding a tumor of the renal tract. Let me consider first the possibility of some malignant tumor. Admittedly the differential diagnosis of a malignant tumor of children of this age is particularly difficult. If the patient had entered the hospital with the well marked cachexia that one might expect with a tumor of this huge size, then the diagnosis would be clear; but she was quite well developed and nourished, so I have no evidence from that point of view that she had a malignant tumor. Of malignant tumors that she may have had, a Wilms tumor is eliminated by the normal intravenous pyelogram. As I mentioned before, that is the commonest large malignant tumor in children. Years ago we had in this hospital a child of this age with a huge fibrosarcoma of the left lobe of the liver. As we know, other very bizzare tumors may appear in children of this age and may grow very rapidly. It is conceivable that this could have represented such a tumor, which was pressing up on the bile duct to produce the jaundice. This mass by x-ray examination seemed to be independent from the lobe of the liver and therefore a tumor originating in the liver can be ruled out. Another possibility that I ought to consider is a tumor arising from the sympathetic ganglia, such as a ganglioneuroma arising from the region of the right adrenal gland. Again there was no evidence in favor of that because there was no displacement of the kidney. I am not very well pleased with the diagnosis of malignant tumor.

I think it is more likely that I am dealing with a congenital abnormality. The most common congenital abnormalities that I have to consider are the congenital cysts of the bile duct and duplications of the duodenum. There is some evidence in favor of the cyst of the bile duct on several bases; one is the frequency of the two diseases. When Dr. Gross collected his first series of duplications of the duodenum, for example, he was able to find only one of those cases in the Children's Hospital records and was able to collect some 50 cases of congenital cysts of the bile ducts. Over ensuing years, congenital cysts of the bile duct are becoming considerably more common than duplication of the duodenum. The duodenum is one of the rarer parts of the intestinal tract to be duplicated. It is quite clear than any duplication would have had to be of the duodenum to explain the jaundice; that is the one tumor other than the cyst of the biliary tree that can produce jaundice.

Then I have some evidence from the symptomatology of the patient. When duplications of the duodenum occur (and cysts of the head of the pancreas and paraduodenal cysts all should be put in the same group). the patients usually have symptoms of duodenal obstruction. Jaundice is uncommon with the duplications. On the other hand, patients with cysts of the bile ducts have a triad of symptoms that consists of abdominal pain, jaundice and a mass. The pain was not well marked in this particular child, but it would be rather hard to elicit anyway. She was becoming irritable; that possibility represented a mild degree of pain. She certainly had a mass and she certainly had jaundice. Consequently from the point of view of symptomatol-

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ogy this diagnosis would fit perfectly well.

I suppose she did have a cyst of the common duct; that of course could be manifested at her age. If these patients have a complete atresia of the bile ducts, the diagnosis is often made in the first two or three days of life. Dr. Nathan Talbot tells me this diagnosis is not always easy, since several days may elapse before jaundice is definite. If there is a simple cyst the diagnosis may be made at any time — even in adult life. It is of interest that one of the early patients on whom the diagnosis was made about twenty-five years ago is now in the hospital again. She has had repeated operations on the cyst of the common duct and now has a carcinoma of the head of the pancreas, perhaps indicating that there is more wrong congenitally than is suspected. Embryonic rests may be present as well as the cysts.

It is of interest to speculate on what influence the infection may have had on the onset of the symptoms. Many of these patients at operation or at autopsy are found to have patent ampullas of Vater. The infection may have been just enough to produce an obstruction at that site. Some of these patients have a condition that is probably analygous to an achalasia of the esophagus or colon in that everything appears to be perfectly normal except for the absence of nerve cells. At any rate, the etiology is far from clear. The treatment is more standardized. I believe that when the surgeon explored this girl he found a cyst of the bile duct that he anastomosed in some fashion to the intestinal tract.

CLINICAL DIAGNOSIS

Enterogenous cyst (duplication of duodenum)

DR. WELCH'S DIAGNOSIS

Congenital cyst of common bile duct.

ANTATOMICAL DIAGNOSIS

Congenital dilatation of common bile duca. (choledochal cyst).

Obstructive cirrhosis of the liver.

PATHOLOGICAL DISCUSSION

Dr. Castleman: I am sorry that Dr. Robert R. Linton, who operated on this child, cannot be here. His preoperative diagnosis was a duplication of the duodenum. At operation, he found a cyst of the common duct, as Dr. Welch predicted. This anomaly probably should not be called a choledochal cyst because it is really a part of the wall of the common bile duct that has become markedly distended apparently due to some congenital weakness in the wall. Gross and Ladd prefer to call it congenital dilatation of the common bile duct. The dilatation of the common duct contained over a liter of bile, which was removed through a window in the wall; bile was seen coming down from the liver through a very small lumen. The bile was drained through a T-tube and an anastomosis made with the jejunum. The liver at the time of operation was grossly cirrhotic and a biopsy showed moderate bile stasis and definite obstructive cirrhosis — fibrosis and bile-duct proliferation. The amount of bile-duct proliferation was much more than one would expect with the short period of jaundice that she apparently had.

The follow-up on this patient is interesting. She continued to be jaundiced for about two weeks; the jaundice then gradually decreased until about three and a half weeks after operation, when the stools became tan and the jaundice disappeared. She was sent home with the T-tube still in place, to be left there for about six weeks for adequate decompression. I understand from a surgical standpoint of view that in these cases no attempt should be made to remove the cyst.

Dr. Welch: They are impossible to remove and the patients have usually done very well following anastomosis.

Dr. Kranes: Where does the obstruction arise in these cases? In the site of entrance into the duodenum?

Dr. Castleman: Usually it is in the lower end just proximal to the ampulla; the weight of the dilated and full sac produces a kink in the common bile duct.

ADDENDUM

Dr. Robert R. Linton: I wish to compliment Dr. Welch on making the correct diagnosis. From the surgical point of view, the chief point of interest is the type of anastomosis that was utilized. In most cases in the literature a direct choledochoduodenostomy has been performed, whereas in this patient a choledochojejunostomy using the Roux-Y approach was performed. In the former, ascending biliary infection is frequently a serious complication. It was hoped with the type of anastomosis used in this case that it might be possible to prevent it. The drainage tube is still in place and it is our plan to have patient return in a month for a cholangiogram. Whether further surgery will be performed or not will depend a great deal on the findings at that time.

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1. Selling, L.S.: J.A.M.A. 157: 1594 (April 30) 1955. 2. Borrus, J.C.: J.A.M.A. 157: 1596 (April 30) 1955.

THE President's PAGE

THIS page will be devoted to excerpts from an Editorial of the Journal of the American Medical Association, published previously; however, because of its importance, it is felt that it contains some essential facts which may be read or re-read with some interest."

THE 1954 MEDICAL CARE DOLLAR

The long-term trends noted in the text — declines in the proportions of the total medical care expenditures for physicians' and dentists' services and rises in the proportions spent for hospital services and for all other medical care — continued in 1954. In 1954 physicians received 27.50 cents and the dentists, 9.20 cents from the medical care dollar; this is about 3/5ths of a cent less for physicians and 1/5th of a cent less for dentists than in (revised) 1953. (See table 3 which shows 28.15 cents and 9.43 cents, and chart IV in text.) The amount going for drugs and sundries also continued to decline; the 1954 portion of the medical care dollar going for this item was 15.40 cents, or 7/10th of a cent less than in 1953 (table 3 shows 16.15 cents). Three fourths of a cent more went for hospital services in 1954 than in 1953; the precise amount was 26.71 (table 3 shows 26.02) cents). Slightly greater was the increase in the amount going for all other medical care — 21.19 in 1954 as compared with 20.40 in 1953 (table 3 shows 20.06 cents). For the reader who would like to round these percentages and prepare his own "1954 Medical Care Dollar" similar to chart IV, the following distribution is suggested: Hospitals — 27c, Drugs — 15c, Other — 21c, Dentists — 9c, and Physicians — 28c.

A breakdown of the three items which comprise "all other medical care" expenditures, is illuminating. In 1954, the total dollars expended for "ophthalmic products and orthopedic appliances" actually decreased; consequently, the proportion of the medical care dollar decreased silghtly — by 2/5ths of a cent. The proportion spent for "other professional services" decreased only slightly. On the other hand. the amount spent for "medical care and hospitalization insurance" in 1954 incresed by $188 million over 1953. (This item is, essentially, premiums less claims with some allowance for reserves; it also includes unstated but comparatively small amounts paid to group health plans and as student fees for medical care.) This is 33% of the additional dollar amount spent for medical care and drugs in 1954. (The proportions of the 1952 and 1953 medical care dollar going for the insurance item were given in text table 3A as 7.89 cents and 8.87 cents, respectively; the revisions given here change these proportions to 8.06 and 9.06.) The 1954 portion of the medical care dollar spent for "medical care and hospitalization insurance" was 10.35 cents. This is more than a cent above (10.35 less 9.06) that expended on the same item in 1953; for the first time in medical economic history the amount spent by consumers for the health insurance overhead was a larger share of the medical care dollar than that received by dentists. When it is realized that these are the overhead costs of **having** voluntary health insurance, the reader may obtain some idea of how great the increase has been in insurance coverage for the consuming public.

In summary, there was a shift in the parts of the medical care dollar; about 1½ cents less went to physicians, dentists, and the suppliers of drugs and sundries, while 1½ cents more went to hospitals and to the administration of medical care and hospitalization insurance.

Harry E. Thompson, M.D.
President, Arizona Medical Association.

Editorial

ARIZONA MEDICINE
Journal of
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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the OURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

DON'T MISS THIS

PHOENIX and Arizona are in for a treat medically speaking, since they have the privilege of being the host for the 1955 annual meeting of the Southwestern Medical Association in cooperation with the second annual conference on recent advances in medicine of the Maricopa County Medical Society have arranged an outstanding program. Notes regarding this program will be found elsewhere in the Journal and every physician in the area has been mailed a copy of the preliminary program so that it would be pointless to repeat it here. We urge every physician in Arizona, many of whom already are members of the Southwestern Medical Association, to read the preliminary announcements of this program and we are sure that he will agree that it is outstanding and something which he will not want to miss. Make your plans now to attend.

There is another bonus attraction for every physician who is in the Phoenix area at that time. The Phoenix Executive's Club has engaged Dr. Ralph J. Gampbell to speak to them on Friday, November 18 on the subject of socialized medicine. The full announcement concerning this will be found elsewhere in the Journal but because his subject should be of considerable interest to the physicians attending the Southwestern Medical Association meeting, the Executive Club has decided to open this meeting to all of the doctors and their wives who do not have conflicting meetings for that evening and who may wish to attend. Dr. Campbell left England because he did not wish to continue practice under their system and has now had five years experience in practice in the United States and should have a message which will be interesting to us all.

Again we say DON'T MISS THIS!

AN INVITATION FROM THE PHOENIX EXECUTIVE'S CLUB

THE Phoenix Executive's Club has invited Dr. Ralph J. Gampbell to address them on the subject of socialized medicine Friday evening, November 18 at 7:00 P.M. This is a dinner meeting to be held in the Thunderbird Room of the Hotel Westward Ho. Because of the interest which Dr. Gampell's message will have for the medical profession, the Executive Club has opened this meeting to any physician and his wife and their friends who may wish to attend. Dr. Gampell has practiced medicine in Britain under the socialized system in effect there and has come to America to escape that system. He has now practiced for five years in the United States and is well qualified to contrast and compare the two systems of practice.

Those physicians and their wives and friends who wish to attend should send in their reservations immediately. Contact the secretary of the Executive's Club, Miss Jane Hudgins, 1305 E. McDowell Road, Phoenix, Ariz. The dinner is $5.00 per plate.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND. DRS.

By Guillermo Osler, M.D.

THE new SYNTHETIC STEROIDS continue to seem safer and more effective as more reports appear each week. The trade-names include 'Prednisone' (Pfizer), 'Meticorten' (Schering), et. al. . . . The advantages over cortisone and ACTH drugs are the scanty effect on the electrolytes, fluid balance, psyche, etc., and the more efficient action on certain types of arthritis, asthma, skin lesions, and various types of allergy. . . . The sed. rate more often drops to normal. The salt intake need not be limited. There is a lack of blood pressure effect. . . . The dose may be restricted to 50 mg. per day at the start; 35 mg. daily for a week; and an average maintenance of 15 mg. per day.

HAVE YOU BEEN CALLED A HERO lately? You may be one, tho possibly an unconscious-type hero. The J.A.M.A. has said that "It is a wise doctor who knows his own danger", and the routine medical hero is an accidental one who does work in which hazard is inherent. . . . The greater heroism is that of the M. D. who sees a danger and then exposes himself deliberately for the benefit of a patient, or a cause, or for science. The deliberate martyr role is one which never lacks applicants, tho quite often they don't survive the third act. . . . We aren't all like that, but it's pleasant to know that more than a few of our colleagues are.

A SENSE OF ADVENTURE is also refreshing to see. The most recent example is the shift from Texas to Ohio of a person who has sometimes been quoted in this column, Chauncey ('Sarge') Leake. . . . He is a fabulously versatile pharmacologist, physiologist, medical historian, dean of medicine, vice-president of the U. of Texas, author, voracious reader and abstracter, etc., etc. . . . He has now resigned, moved to Ohio State at Columbus, and is to work in basic sciences at the huge new Health Center there. . . . When an old firehorse hears the alarm, I guess he's got to go. . . . Dr. Leake starts off each monthly issue of his international one-sentence abstract with the phrase "Calling Attention To,—", which is what we are doing here.

One seldom sees an announcement from an M.D. which describes a pleasant change of location as perfectly as the one from Frank L. Meleney of New York. We have a special interest, since he has been a fine surgeon, terrific investigator of infections and chemotherapies, and he contributed to ARIZONA MEDICINE about five years ago. . . . The engraved notice gives his name, the initials of his four degrees, a comment that he is a founder of the American Board of Surgery, and his major teaching title, "Professor EMERITUS of Clinical Surgery, Columbia University." . . . Then, he announces the transfer of his practice to MIAMI, FLORIDA! . . . Peace. Peace. It's Wonderful!

Oldsters with BRONCHIECTASIS are never free of infection in their respiratory tract, says Pittman of Mass. Gen'l. Hospital. He advises protection from 'colds', which invariably cause bronchitis and patchy pneumonitis, by starting intramuscular injections of penicillin at the onset and daily doses for 5 to 10 days. . . . We'd like to see a comparison of this routine and one which uses oral Tetracyn or some such drug. The convenience and theoretical advantages would lead us to use the latter anyway.

One of the exhibits at the A.M.A. meeting in Atlantic City described a means for REDUCING TRANSFUSION REACTIONS. Stephen, Martin, and Bourgeois-Gavardin of Duke say that when Pyribenzamine solution is added to a unit of blood there is a significant reduction in the chance of allergic and pyrogenic reactions. . . . The incidence of allergic reactions in 1,500 patients given plain blood was 3.1 per cent, compared to 0.6 per cent in the 1,600 patients given blood containing the anti-histamine. The reduction in pyrogenic reactions was not as great but amounted to about 40 per cent. . . . Hemolysis was actually less in the AH series. . . . The dose was 25 mg. of Pyribenzamine in the first pint of blood, and none in later pints unless more than 12 units were used, or unless the interval between transfusions was more than 6 hours.

FECAL IMPACTION and severe constipation are tough problems which now have another method of therapy. Wilson and Dickinson of Ann Arbor have said that 'AEROSOL OT' can be used to make the scyballous material porous to water or mineral oil. . . . It can be given TID by mouth (2 cc of a 1% solution in milk or fruit juice) or by enema (5 cc of a 1% aerosol in 1 to 2 oz. of mineral oil). . . . There is no notable effect on fat or protein absorption; the aerosol is non-Toxic; and it can be used indefinitely without change in effect.

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Special Published Bi-monthly by Hospital Benefit Assurance, First Street at Willetta, Phoenix October, 1955

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BRAVERY has an isomer which often occurs in patients. It is called COURAGE, and it may be of a positive, open sort (like when a patient faces pain or a gloomy diagnosis) or a quieter, hidden kind. . . . The QUIET courage is that which is required for awaiting the results of tests, or the courageous honesty which is needed to avoid cheating. . . . Why should a patient cheat, even in a negative way, when he is the one to suffer? Hard to say, unless you, yourself, have been presented with the chance. Most tests can't be faked or minimized (fortunately), but a sputum test for tubercle bacilli has less chance of being positive if one doesn't try very hard. Maybe it's brave to expectorate?

While mousing-around on the surface of patient and physician reactions it might be appropriate to mention a newly coined word,—'IATROERGIC'. . . . Most of us have barely become familiar with the similar term 'iatrogenic' (which means 'an effect or attitude which may be produced in the patient by the attitude of the physician'). . . . 'Iatroergic' is the effect on a physician of the pills he gives to the patient. It is a chief obstacle to honest research, even when controls are used, or placebos given in place of the drug being tested. The physician is so hopeful and convinced that he unconsciously influences the patient by the way he asks questions. . . . There can even by a 'negative iatroergy', due to the disenchantment of a physician with a mode of therapy.

The incidence of PSITTACOSIS is steadily increasing. Certainly the reportable incidence. There were 6 cases reported in the U.S. in 1941, 303 cases in 1954. . . . Fitz, Meiklejohn, and Baum of Denver describe 18 cases, conclude that ANY 'broad spectrum' antibiotic is good. . . . They advice I.V. therapy only for the sickest patients; use a priming dose of 2 grams; and a continued total of the same amount (in divided doses) per 24 hours. The patients usually are afebrile in 48 hours.

The ANABOLIC EFFECT of testosterone has been used to produce a weight gain in tuberculosis. It does not prevent healing, or surgical healing, and can be accompanied by anti-TB chemotherapy. . . . The dosage is 50 mg. three times a week, and the duration in the series reported by Griffith and Linn in the Amer. Review of TB was 6 weeks to 13 months.

DIAMOX isn't the answer to the problem of congestive heart failure, since it is somewhat toxic, but it is a good lead for the future. . . . It is a heterocyclic sulfonamide which induces acidosis by an alkaline urine. The action occurs by way of the inhibition of carbonic anhydrase in the renal tubules, followed by a lack of hydrogen ion from carbonic acid, an increased urinary excretion of sodium, a decreased ammonium excretion, an increased loss of potassium, and a decrease of edema due to diuresis. . . . A variable effect has been reported in cardiac decompensation, pulmonary emphysema, epilepsy, etc. Worth a greater trial, they say.



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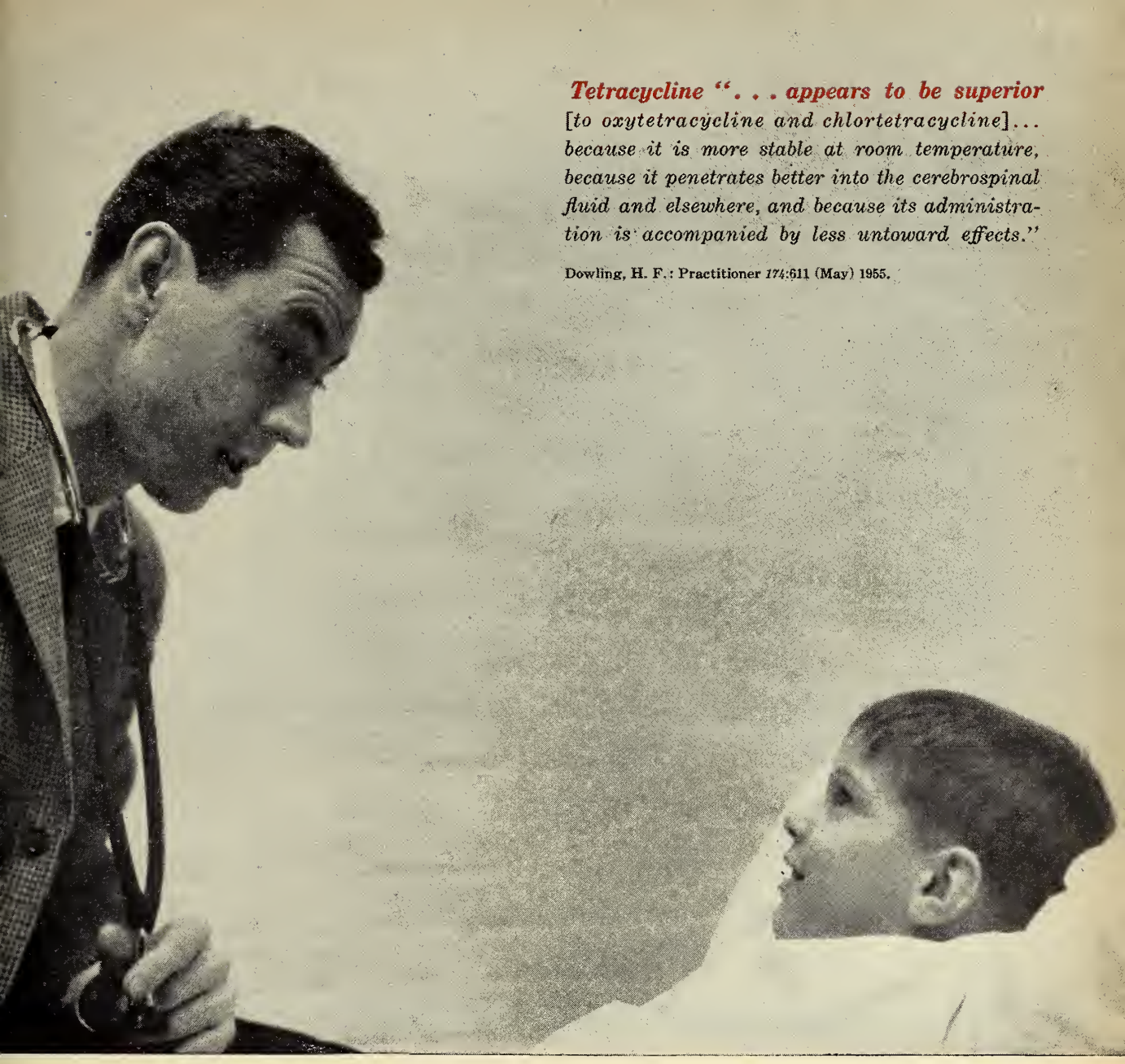
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Dowling, H. F.: Practitioner *174*:611 (May) 1955.

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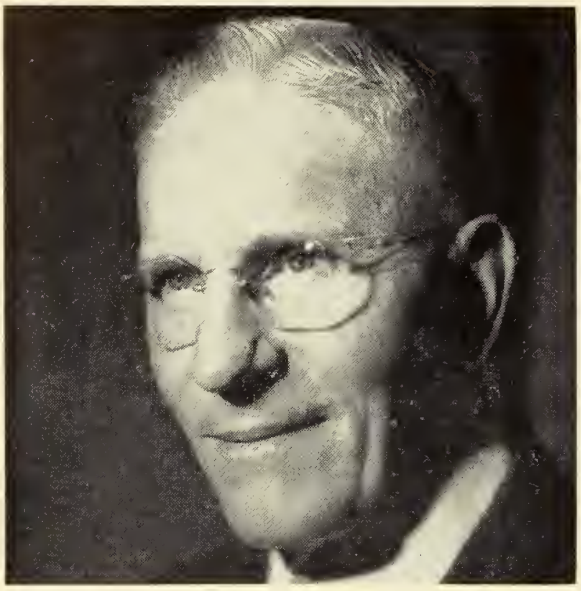
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WHO CARES MOST



Fred G. Holmes, M.D.

FRED GOODING HOLMES, (1889-1955) departed this earth suddenly and tragically. Perhaps the manner in which he went makes more poignant the sense of evaluation of loss to those who knew him, and brings more sharply into focus the qualities from which we received our impressions of the man.

On Saturday, August 6, at five o'clock in the morning, he embarked with his son Fred W., and his two grandsons, Fred and Stephen, on the Klamath Bay, near the mouth of the Klamath River, in a sixteen foot boat. The boat was equipped with an outboard motor. It had life preservers for each, and salmon fishing equipment. Fred Sr. had been fishing the bay for some weeks prior to this fateful morning, and had been there a number of times in years past. They expected to return about 9 A.M. The fog rolled in before sun-up and nine o'clock passed with no sign of the party. Dense fog continued during the day. Search parties failed to locate any sign of the boat or the Holmes group. On the next day, the body of Fred Jr. was found washed up on the shore, about four miles north of the mouth of the Klamath River. Continued search up to the present writing, has failed to locate the rest of the members of the group. The boat was found awash near the body, and two life preservers were still attached. Whether outboard motor failure or confused directions as the result of the fog, swept them into the rough water of the river, where the tide meets the river flow, and capsized the boat, is speculation. The moments of fearful anguish can be imagined, facing certain destruction by the elements. To realize that communication was at end, when each had so much to say and so much service to render, must have been inexpressibly difficult.

Some of the facts of Fred G.'s life have particularly universal appeal. He not only worked his way through college, but at the same time helped support his mother and his brothers and sisters. Several times during our long association, Fred mentioned one of the things of which he was most proud, and that was that he had been number one Saturday Evening Post salesman, for the entire United States, during his years at Berkeley, University of California. One who has tried selling magazines knows that this accomplishment required a combination of tremendous energy, persistence in the direct approach, the ability to waste as little time as possible, to make moments count, to assume sincerity on the part of his casual contacts, and to demonstrate sincerity and honesty by his open simple appeal to prospects. The self-discipline and training thus acquired during his youth largely foretells the outstanding accomplishments of his mature years. He graduated from Harvard Medical School in time to serve in the First World War, following which he came to Phoenix, and started a general practice.

He called a consultation on a chest patient with one of the older doctors here, who demonstrated so much superior knowledge of chest diseases that the patient requested changing physicians. This challenged Fred G. to the point of sending him back to the Trudeau School of Tuberculosis, in 1920. From that time on his knowledge and skill in the treatment of chest diseases grew and his reputation extended. He was a great enthusiast for pneumothorax, which at that time was the most successful method of combating far-advanced tuberculosis. Several of the cases of bilateral pneumothorax, which he brought through extensive disease demonstrated for the first time how both lungs may be more than 75% collapsed, and still maintain satisfactory ventilation in the patient. On exhaling, under the fluoroscope, the lung shadows would entirely disappear behind the heart. Some of these early films were exhibited at the Century of Progress, Scientific Exhibit, in Chicago, in 1933.

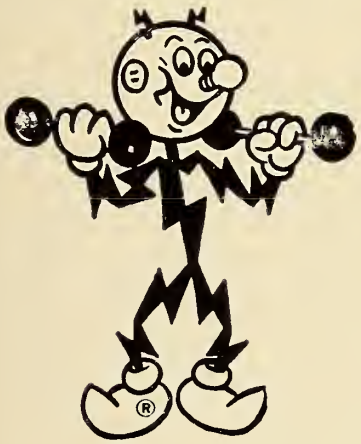
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In 1935, he called me into his office one day, and said, "Here is a film of a patient. What would you recommend?" Whereupon, I told him about six months to a year in bed. He said, "Well, that's my X-ray." During his bed rest, which turned out to be about nine months, he wrote a popular book for the patient on the subject of treatment for tuberculosis bringing it up to date on collapse therapy; he then published it at his own expense. While not a scientific treatise, this book was used quite widely, for a period of time in the sanitoriums around the country, as a means of assisting in the education of patients.

Voltaire wrote, "You seek for nothing but useful truths, and you say you have scarce found anything but useless errors." But Fred G. had a different philosophy and in that his simple faith gave him confidence in the rightness of his own conclusions. This facility may be said to be grounded in a deep informal religious faith.

At one time, he was all "steamed up" to run for State Senator, and thought he might have a good chance to be elected. However, he selected the U.S. Fair Employment Practices Act, which was being successfully discredited at the time, as his text for eight radio speeches, and soon after starting these talks, he found from the reaction of the electorate, that his chance of election was being dissipated. From that time on he continued making speeches with the idea that it was educational, in spite of the fact that he did not expect to be elected. He ran fifth in a field of six, but during the course of the campaign, his conviction that he was qualified and equipped to accomplish certain things in this life made him determined to quit the practice of medicine and devote his entire time to those ends.

One of these projects was the completion of the new and impressive Y.M.C.A. program for the City of Phoenix. This involved the collecting of a larger fund for charitable purposes than had ever been obtained in Phoenix before. Fred G. put his talents for salesmanship to work, helped to organize the campaign, and with tremendous energy assisted in most of the difficult tasks of persuading the various interests in the city to get together and really do a job in building this new Y.M.C.A. plant. Starting with the Board of Directors, he made it very clear that the only way these men could ask the community for money would be that they each and every one made sacrifices to give generously. He set the example and by persistence, the board followed him up to $60,000. Prospective givers were thoroughly "cased" and the key figures assisted him in going to see these givers in the most favorable circumstances. Along with a few kindred souls, they put over the first drive for funds and faced the disappointment of the shrinking dollar, in characteristic manner; repeating the drive and almost duplicating it. His persistent single purpose confidence was the ingredient, which added to that of several other individuals, made the community surprise itself.

A second theme, which occupied his enthusiastic attention, for a period, was brought about by his being invited to be an elder of the Presbyterian Church. While he had been a consistent valued worker in the church particularly in financial affairs, he entertained some doubts of signing the creed, without knowing fully what it contained. The fact that very little revision of the fundamental tenets of the church had taken place in 300 years challenged him to make an all out effort to have some of the basic parts of the creed revised. He wrote hundreds of letters and spent a considerable sum of his own money in trying to accomplish something nationally. He was elected to the fifteen man national board of the church with fourteen clergymen. He was not content to leave religious philosophy to the clergy. The question of the "damnation of unbaptized infants" was of real importance to him. But he was disappointed in the final outcome, as he was out-talked.

The final great sociological issue with which he greatly concerned himself was the question of discrimination against minority groups, within our social system. If one has any doubt about the value and importance of individual efforts or activities, the course Fred followed in regard to the minority groups should be a distinct and convincing lesson. Although the Supreme Court of the United States may not know it, Dr. Holmes' efforts in Arizona from 1948 on, may have profoundly affected the final decisions rendered in 1954, on the desegregation of schools.

Fred G. had placed himself in a position where he could not be greatly affected financially by adverse criticism. In this manner he had become a free agent to follow the dictates of his conscience without regard for the consequences



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and his own economic welfare. Therefore, he was able to take the onus of some of the more difficult and disagreeable tasks in pointing out to the community the inconsistencies of discrimination. He accepted the brunt of the pro-discrimination attacks. His efforts materially stepped-up the time table for desegregation of the schools in the State of Arizona in 1953. This action by the state helped to create a "national trend", and could be interpreted as a swing of national opinion. It is generally accepted that the desegregation opinion of the U.S. Supreme Court was based as much on sociological data and public opinion as it was upon the law and precedent which indeed, was, to some extent, set aside. Fred G. so firmly believed that the very creation of an individual gave that individual the right to equality of opportunity that his mind worked incessantly to unravel the ramifications of the complex problem and simplify the steps which had to be taken, in order to make progress in the direction of accomplishment of that equality of opportunity. Chief Justice Warren is given responsibility for the Supreme Court action, but this rested squarely on what the country and the people were ready to accept. It is easier to deal with the abstract decision than to do some of the things Fred G. did. In these things he was a consistent, fearless, sincere, effective thinker — and doer.

Howell Randolph, M.D.

MEDICAL SUPPLY REPORT

OPERATION ALERT 1955 is over. It was assumed that atomic and hydrogen bombs had wrecked 58 cities throughout the nation. Approximately 8,200,000 people were killed, 6,500,000 were injured and vast areas were contaminated with radioactive fallout.

The nearest target city to the Phoenix area was Los Angeles, California, where three H-bombs hit the city on the morning of June 15th, left 797,000 dead, 637,000 seriously injured and demolished a third of the city's buildings.

Our supply problem was to assist the devastated area with the supplies available in this area, earmarked for civil defense use. Another and vital consideration was the care of thousands of evacuees pouring into Arizona, over two main highways, and arriving in a large mass at one time. This problem of supply made it essential that we make an immediate survey of drug resources and I believe that you will find the results of that survey interesting.

One shortage, of vitally important water purification tablets, was immediately obvious. Steps were taken at once to remedy this shortage and, as of this date, the necessary supply is on hand.

No attempt was made to ascertain the amount of narcotics available for such an emergency. I feel that some plan should be worked out with the Federal Government to insure a report on narcotics available for any disaster that might confront us in the future.

Another supply that is not considered at all in this report is that carried by retail pharmacies, which I believe are adequate.

Bob Shankland, pharmacist, has done a very fine job in regard to supplies at local pharmacies and should be highly commended for his untiring efforts.

We are very grateful for the complete cooperation of our drug jobbers, without whom this report to you would be impossible.

Our thanks to John Walker, Brunswig Drug Company, James Brandt, McKesson & Robbins Drug Company, and Emmett Davis, Phoenix Wholesale Drug Company.

MEDICAL SUPPLIES AVAILABLE FOR CIVIL DEFENSE

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570	cc vials	Penicillin G 300m sgle. dose dispensable syringe
440	5cc vials	Penicillin G 300m
45	20cc vials	2 mil. u per cc Penicillin G Lilly
25	20cc vials	5 mil. u per cc Penicillin G Lilly

VASELINE in total lbs.

769 This item shows a great improvement over supply in 1954.

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Hypodermic Syringes — all sizes — 2½ gross. Hypo needles — all sizes — 5 gross. This item is in short supply due to a strike at the Becton-Dickerson plant in New Jersey. This condition could be disasterous if an emergency should arise.

NOTE: This has now been corrected. First shipments from B.D. Co. came in this week.

This Report Dated — June 15th at 4 P.M. and submitted by:

Fred C. MacAlpine
Chief of Medical Supply
State of Arizona, Civil Defense

MEETING NOTICE

THE 1955 meetings of the WESTERN INSTITUTE ON EPILEPSY and the WESTERN SOCIETY OF ELECTRO-ENCEPHALOGRAPHY, cosponsored by the AMERICAN ACADEMY OF GENERAL PRACTICE (Ariz. Chapter) and the UNIVERSITY OF UTAH SCHOOL OF MEDICINE will be held in the Thunderbird Room of the Westward Ho Hotel in Phoenix on Thursday, Friday, and Saturday, November 10-12, 1955.

The program will include a seminar on the diagnosis and treatment of epilepsy and related convulsive disorders, clinical and research aspects of electro-encephalography, and presentations on the social, educational, and employment aspects of epilepsy.



Dr. Wilder Penfield

The guest of honor will be Dr. Wilder Penfield, Director of the Montreal Neurological Institute. Dr. Penfield's work in the field of epilepsy and cerebral localization is classical in the field of Medicine.

The committee, which is in charge of arrangements, includes: John R. Green, M.D., Phoenix, General Chairman, and President of both specialty groups; S. N. Berens, M.D., Seattle, Sec'y-Treas., Western EEG Society; Madison H. Thomas, M.D., Salt Lake City, Sec'y-Treas., Western Institute on Epilepsy; Matthew Cohen, M.D., and Robert A. Price, M.D., Phoenix, the Educational Committee of the American Academy of General Practice, Arizona Chapter.

All members of the Arizona Medical Association are cordially invited to register and attend the scientific and social sessions. Registra- will begin at 3 P.M., November 9, 1955 and again at 8 A.M., November 10, 1955 in the Thunderbird Room of the Westward Ho Hotel, Phoenix. The first scientific session will begin at 9 A.M., November 10, 1955. The program has been approved by the Regional Commission on Education, American Academy of General Practice, for 6 hours of formal credit for members of the Academy.

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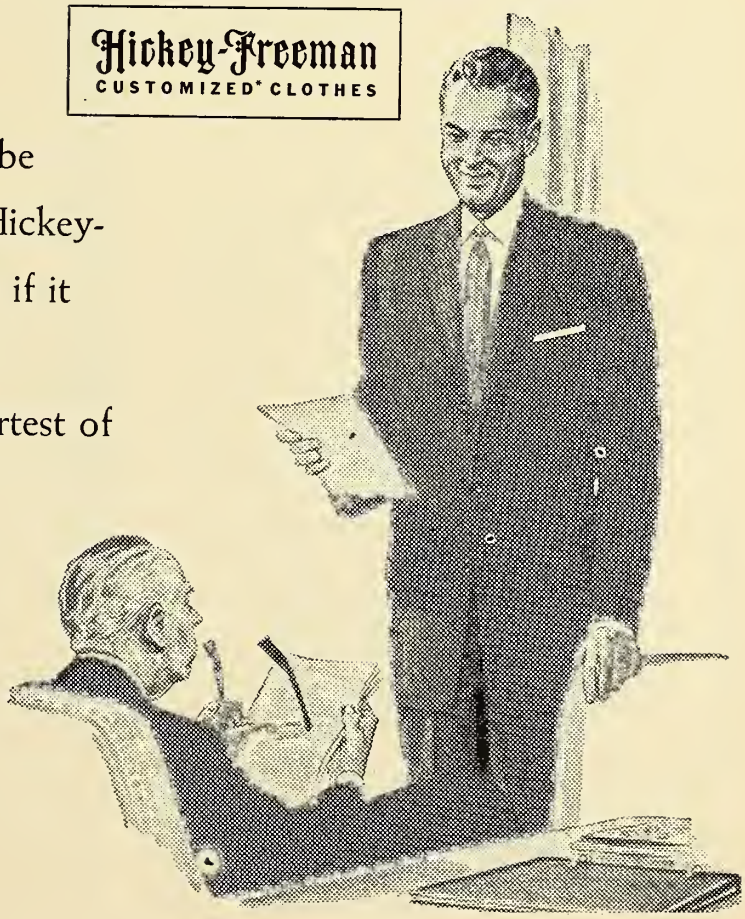
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THE 1955 Annual Meeting of Southwestern Medical Association in association with The Second Annual Conference on Recent Advances in Medicine of the Maricopa County Medical Society, Phoenix, Arizona, November 16, 17 and 18, 1955, Hotel Westward Ho.

EMINENT GUEST SPEAKERS

H. L. BOCKUS, M.D.
Professor of Medicine, University of Pennsylvania Graduate School.

WILLIAM E. EHRICH, M.D.
Professor of Pathology, University of Pennsylvania Graduate School

L. KREER FERGUSON, M.D.
Professor of Surgery, University of Pennsylvania Graduate School

HANS. H. HECHT, M.D.
Associate Professor of Medicine, University of Utah

JOHN W. KIRKLIN, M.D.
Assistant Professor of Surgery, Mayo Foundation, University of Minnesota

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Associate Professor of Orthopedic Surgery, University of Iowa

KENNETH L. ROPER, M.D.
Associate Professor of Ophthalmology, Northwestern University

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Chairman of Sections, Mayo Clinic

REGINALD H. SMART, M.D.
Clinical Professor of Medicine and Coordinator of Chest Diseases, University of Southern Cal.

JOHN WEBB, M.D.
Professor of Pharmacology, University of Southern California

J. WALTER WILSON, M.D.
Associate Professor of Dermatology, University of Southern California

PRELIMINARY PROGRAM

Symposium — Regional Enteritis and Enterocolitis — Doctors H. L. Bockus, L. Kreer Ferguson, and William E. Ehrich.

Symposium — Orientation of Massive Bleeding From the Upper Alimentary Tract — Doctors H. L. Bockus, L. Kreer Ferguson and William E. Ehrich.

Symposium — Experience with Subtotal Gastrectomy in the Management of Peptic Ulcer — Post-Gastrectomy Sequelae — Doctors H. L. Bockus, L. Kreer Ferguson and William E. Ehrich.

Prevention of Malignant Neoplasm of the Gastrointestinal Tract — Doctor H. L. Bockus.

Prophylaxis and Treatment of Complications Following Biliary Tract Surgery — Doctor L. Kreer Ferguson.

The Adrenals — Doctor William E. Ehrich.

Clinical Disturbances of the Pituitary Gland — Doctor Edward H. Rynearson.

Which Goiters Are Best Treated with Surgery and Which by Radioactive Iodine — Doctor Edward H. Rynearson.

Real Versus Supposed Disturbances of the Endocrine Glands — Doctor Edward H. Rynearson.

Symposium — Surgical Evaluation of Acquired Heart Disease — Doctors John W. Kirklin and Hans H. Hecht.

The Treatment of Atrial and Septal Defects — Doctor John W. Kirklin.

Surgery for Occlusion and Aneurysms of the Aorta — Doctor John W. Kirklin.

Essential Pulmonary Hypertension — Doctor Hans H. Hecht.

How to Evaluate Polycythemia — Doctor Hans H. Hecht.

Hip Disorders in Children — Doctor I. V. Ponseti.

Complications of Fracture Treatment — Doctor I. V. Ponseti.

Skeletal Lesions Produced by Aminonitriles — Doctor I. V. Ponseti.

Fungous Diseases — Doctor I. Walter Wilson

Delusion of Parasitosis — Doctor J. Walter Wilson.

The Effect of Drugs on Pulmonary Circulation and on the Control of Respiration — Doctor John Webb.

The Newer Drugs for Anesthesia — Doctor John Webb.

The Action of Drugs in Clinical Use for Heart Disease, Other Than Digitalis — Doctor John Webb.

Clinical Observations of the Value of Pulmonary Function Studies — Doctor Reginald H. Smart.

The Pneumoconioses and Pulmonary Function; Industrial Insurance Considerations — Doctor Reginald H. Smart.

Cataract Surgery — Doctor Kenneth L. Roper.

Ophthalmic Office Practice Procedure — Doctor Kenneth L. Roper.

Entertainment: Informal Party, Dinner Dance; special activities will be arranged for the ladies in attendance.

Hotel Reservations: Make hotel reservations at once through Chairman of Reservations, Maricopa County Medical Society, 2025 North Central Ave., Phoenix, Arizona.

We urge you to attend this outstanding meeting of the Southwestern Medical Association and the Annual Seminar of the Maricopa County Medical Society.

Joseph Bank, M.D., President, Southwestern Medical Association.

Carlos C. Craig, M.D., President, Maricopa County Medical Society.

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Woman's AUXILIARY

SUMMARY OF AUXILIARY ACTIVITIES 1930 — 1955



Mrs. Jesse D. Hamer
Phoenix, Arizona

THE Woman's Auxiliary to the American Medical Association, during its 32nd annual meeting held at Atlantic City, New Jersey, June 6-10, 1955, conferred upon Mrs. Jesse D. Hamer of Phoenix, Arizona, Honorary Membership in that organization, which entitles her to all the rights and privileges of active membership.

Mrs. Hamer was president of the Woman's Auxiliary to the American Medical Association in 1946-1947; president-elect for two years, 1944-1946; and a director for four years, 1943-1944 and 1947-1950. She was chairman of the legislation committee, 1941-1942, and of the nominating committee, 1948-1949; western regional chairman of the war service committee, 1943-1944; a member of the reference committee for three years, 1948-1949 and 1952-1954, and of the finance committee, 1947-1950; and has been historian since 1947, a position she still holds.

In 1947, while president, Mrs. Hamer prepared a history of the first 25 years of the Woman's Auxiliary, which was published in the book called "A History of the American Medical Association", which is the official history of the American Medical Association and was compiled that year in connection with the organization's hundredth anniversary celebration. During the 1952-1953 auxiliary year, a 30 year history of the Woman's Auxiliary to the American Medical Association, prepared by Mrs. Hamer, was published in booklet form.

Mrs. Hamer is a charter member of the Woman's Auxiliary to the Arizona Medical Association, organized in 1930, and was its president in 1940-1941. She was president of the Woman's Auxiliary to the Maricopa County Medical Society in 1934-1935. For 25 years she has given continuous active service to the county and state auxiliaries.



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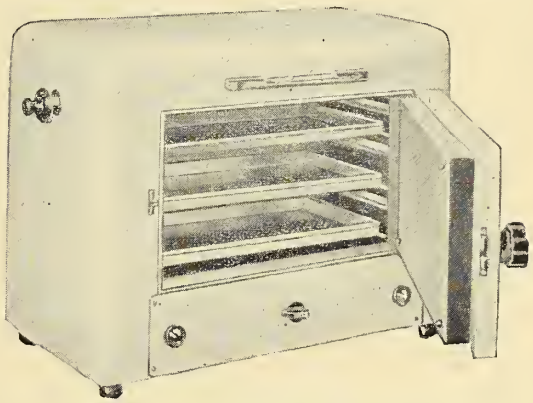
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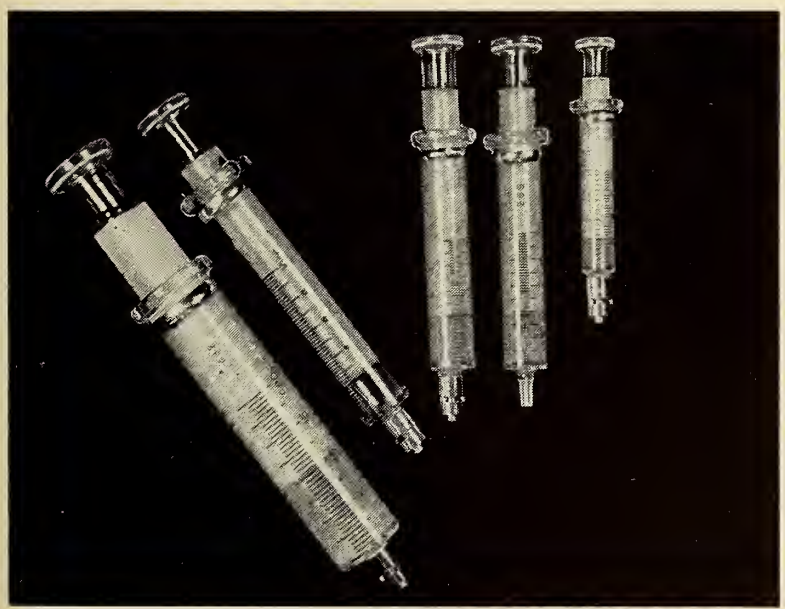
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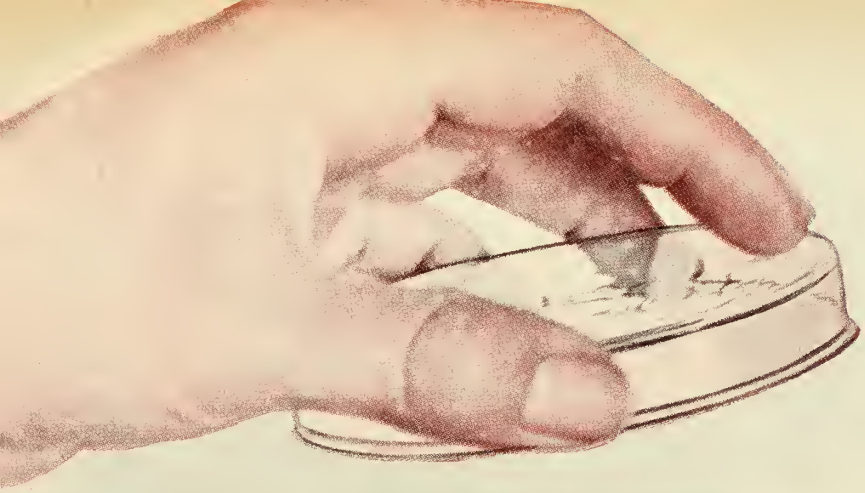
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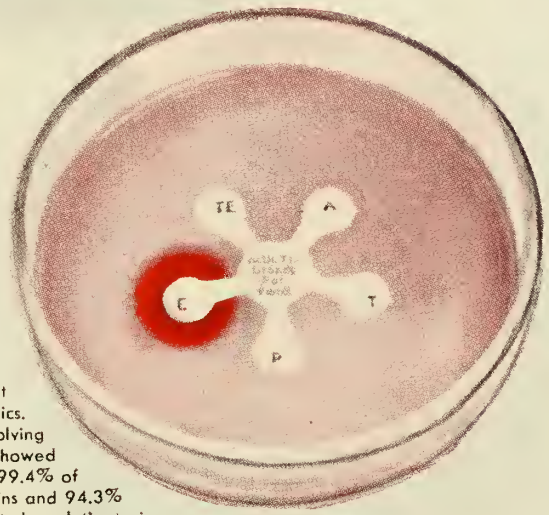
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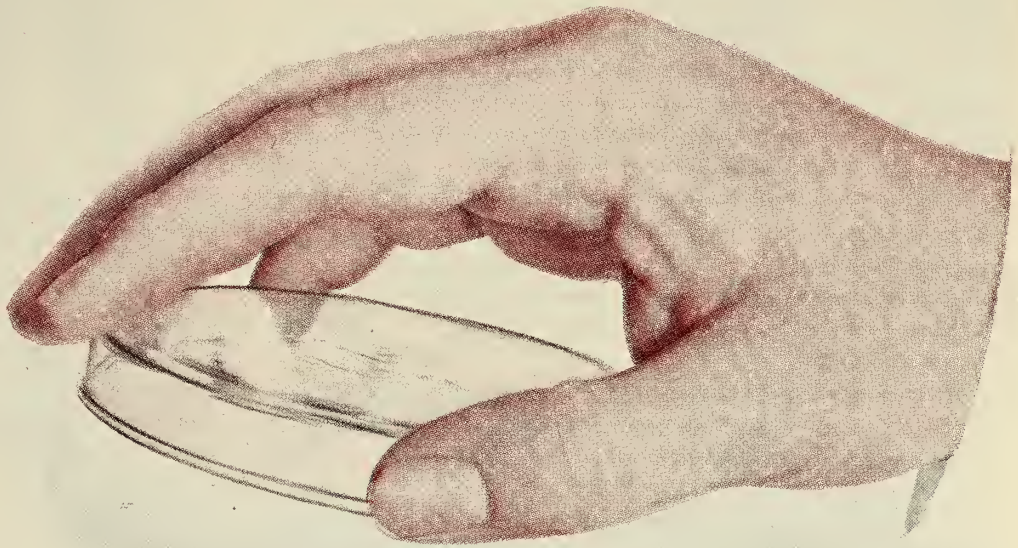
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1. Eisenberg, et al., Antib. & Chemo., 3:1026-1028, Oct., 1953.

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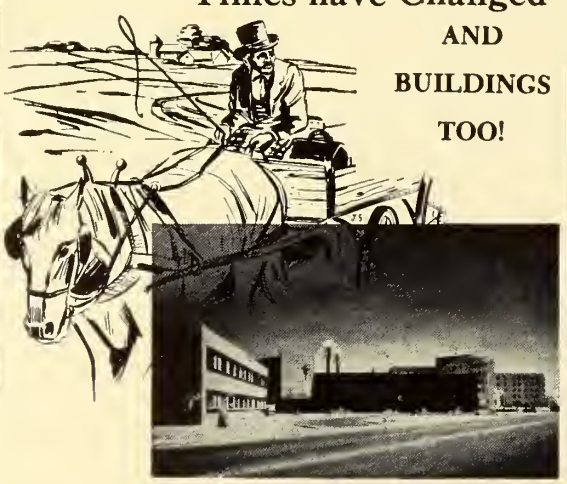
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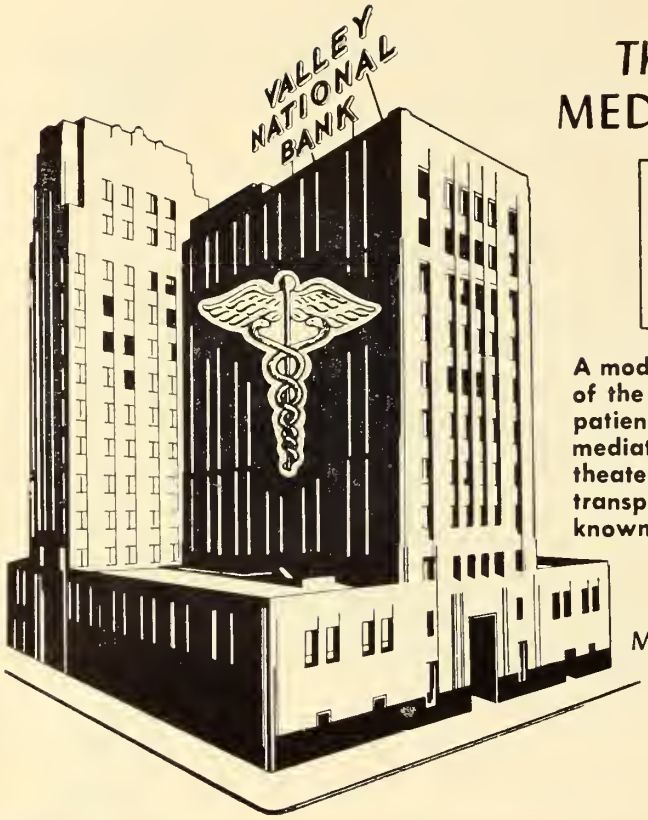
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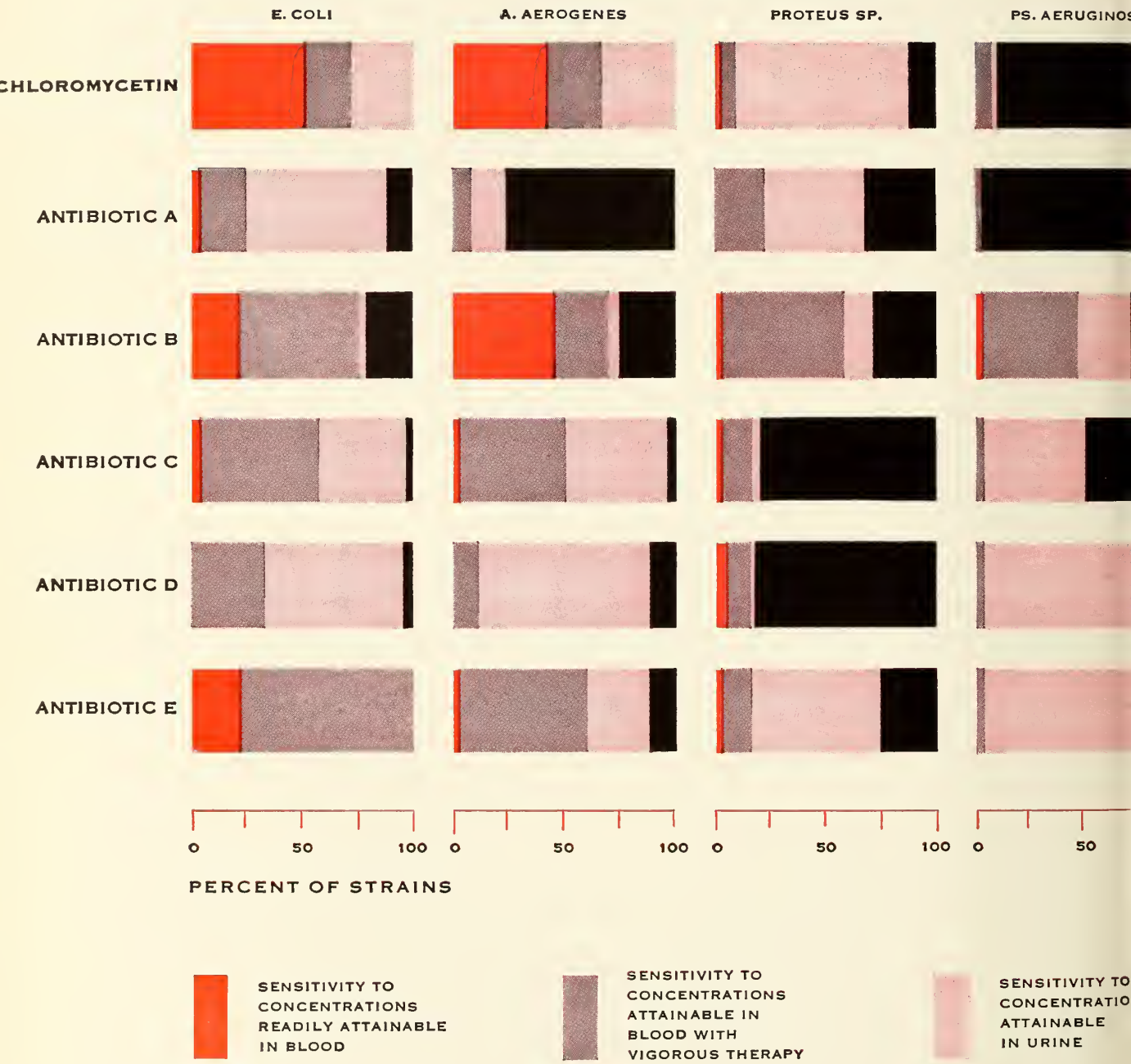
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Original ARTICLES

THE DIAGNOSIS OF HISTOPLASMOSIS AND COCCIDIOIDOMYCOSIS

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Introduction

ONE should be allowed to abbreviate the term histoplasmosis and coccidioidomycosis to 'histo' and 'cox', since the words are so long and clumsy, and since the National Tuberculosis Association has given its seal of approval to the abbreviation 'TB'.

'Histo' and 'cox' are fungus infections which produce disease in a way, and of a type, similar to tuberculosis. The portal of infection, the primary lesions, later lung lesions, disseminated lesions, the x-ray appearance, the delayed skin-test reaction, the antibody formation, and the microscopic pathology are all similar to those of TB . . . Each disease may also occur *with* TB . . . 'Cox' and histo' complicate the study of lung disease, but make it more exciting, and require eternal care and vigilance. We must constantly be medical detectives, and quite often we will have only circumstantial evidence of a crime, since the diagnostic methods are imperfect and the clues do not persist.

The two diseases differ in their *relationship to California* and the Southwest. 'Cox' is an *"export"* disease. It originates here; few other places 'grow' it; and we share its effects with the whole country . . . 'Histo' is an *"import"* disease, since the American source is chiefly in the central United States. What we see in our offices and hospitals is the result of an emigration of its victims from the east, and their appearance is both occasional and surprising.

Read before the California Trudeau Society, Los Angeles, March 18, 1955.

Discussion of Coccodioidomycosis

You know the major endemic areas of 'cox' which include the southern San Joaquin Valley in California, Southern Arizona, Mexico, and west Texas, plus edges of New Mexico, Nevada, and Utah . . . 'Spotty' endemic California areas include a portion north to Merced and Modesto, west to Santa Barbara and Ventura, and parts of San Diego, San Bernardino, Riverside, and (recently) Los Angeles counties. Reports indicate that cases have originated closer and closer to the heart of Los Angeles County . . . These are all arid or semi-arid areas.

The causative organism is a fungus, coccidioides immitis. The terminology is prolix and confusing, but in general the fungus may live in two phases. The *vegetative (or saprophytic)* phase occurs in the soil, where the chief form is the chlamydospore. Cultures produce the same hyphal chlamydospores. They are light, blow easily, either in dust or from the culture, and are highly infectious for animals and man thru the respiratory tract . . . Almost all residents of an endemic area become infected, though one infection confers immunity. A few breaths of a windstorm may infect a transient in such country . . . Animals may be vectors and reservoirs, but to an unknown extent. The fungus lives in the soil for years. The parasitic form lives longer than the saprophytic form in soil experiments, a fact which may be of epidemiologic importance.

The *parasitic* phase consists of a change from chlamydospores into sporangia (or spherules), which then develop endospores, mature, rupture,

and repeat the cycle . . . The two phases may persist independently without altering the character of the fungus . . . It should be stressed that the spherules arrive in the soil by expectoration or excretion from the body. They develop hyphae in 1 to 2 days . . . The peak incidence of human infection is in the dusty seasons. Dust control helps cut the incidence. Spherules are said not to be contagious, and there is good evidence that man to man infection does not occur. However, it has been shown to be possible in animals, and we must be suspicious of hard and fast credos . . . I believe that infectious precautions should be used to prevent spitting and soil contramination, and I believe such hazards are special reasons for segregation and resection of cavity cases.

It is said that 75% of the *initial infections* are "subclinical"; 25% are "clinical", with a varying amount of illness ;and only ¼ to ½ per cent of the cases 'disseminate' thru the body in the white race . . . Darkskinned races tend to have endogenous progression, and negroes disseminate 10 times as often as whites . . . Dissemination is the great hazard, since there is a 50-60% mortality, and 100% mortality in fulminating cases. It is the result of a failure to focalize, and W. A. Winn says patients should be kept in bed until their lesions have focalized.

Symptoms may begin 1 to 3 weeks after exposeure. Primary pulmonary lesions are self-limited, may have 'flu'-like symptoms. Pulmonary infiltrates produce pain in about 80%, cough in 50%, fever in 60%, and arthralgia quite often. They usually last 2 weeks, though the patients may take months to convalesce. Sedimentation rates and the percentage of eosinophiles are elevated. A continued high sedimentation rate, a rising complement titer, and a loss of skin-test reaction suggest impending dissemination . . . In an endemic area, any malaise, bronchitis, fever, or x-ray shadow should be suspected.

Coccidioidin is a very specific skin-test antigen (available from Cutter Lab.). One may test with dilutions starting at 1:100 and continue down to 1:10. Only at 1:10 dilution does cross-reaction with histoplasmin occur . . . The antigen is made from a culture, like tuberculin, and the skin-test is similar to the Mantoux. It develops 2 to 4 weeks after exposure. It persists for years . . . Erythema nodosum or multiforme are also 'allergic' phenomena, and occur in about 20% of the cases at the same time as the skin-test hypersensitivity.

A *complement fixation* test also becomes positive as sensitivity develops. It indicates an active or progressive disease when positive and, as an indicator of humoral antibodies, it is transient. When it is negative or low, in the presence of a lung lesion it is either of no help or indicates focalization. It is so specific that it is said there are no false positives . . . The precipitation test indicates a recent infection, and supplements the complement fixation test to that extent. It does not persist long.

Cultural tests are hazardous to lab-workers. Sputum tests are not needed if diagnosis can be made by skin-test or serology . . . Specimens from lesions produce positive cultures in 55%, and from cavitation the incidence may be more than 90 per cent.

X-ray findings are variable, but the disease in humans usually localizes, usually in the lungs. Winn says that the first lesion is a patch of pneumonitis. Lesions in a group of soldiers included nodules, peri-bronchiel fibrosis, consolidation, hilar adenopathy (23%), cavitation (8%), pleural effusion (2.6%), and nodular dissemination. The initial cavity is usually thin-walled and closes spontaneously, though persistent cavities are notoriously hick-walled . . . In the series quoted, 100% had a history of exposure, 30% had erythema nodosum, 85% had an x-ray lesion, 80% had a positive skin-test, 86% a positive serology, 25% had excess eosinophiles, and 6% had a positive sputum.

'Cox and TB are concurrent enough so that Cotton could add his 24 cases to the 19 in the literature. He resected 9, of which 3 had positive serology and 5 had c. immitis in the sputum; they all did well. Eight infants and 7 adults (not resected) were all positive for TB by culture, and all but one were positive for 'cox' by serological tests and sputum culture.

The general rule is that in dissemination occurs after the acute phase, or focalization, and that there is no recurrence after resection, but rare cases of each *have* been reported.

The diagnosis of 'cox' is important not only because of the health of the patient, and the public health, and our pride, but because of the *medico-legal aspects* which Levan has described. It is becoming a terrific compensation problem for insurance companies, the courts, the industrial commission, and industries. Patients have been

compensated for seven different categories of exposure.

Discussion of Histoplasmosis

'Histo' is a currently fashionable topic. It was first described from autopsies in Panama 50 years ago; it was shown to be caused by a fungus, instead of protozoa in 1934; the cultural characteristics were reported in 1941; and there were less than 200 proved cases by 1952.

Cases have been reported in Central and South America, the Philippines, Java, South Africa, and England, with Panama well-known as a source. The chief North American endemic area encircles the junction of the Ohio and Mississippi rivers, with a decreasing incidence of cases in widening circles.

Definite *facts about infection and disease* are few. Several workers have found pulmonary calcifications in people with negative tuberculin reactions. The USPHS has made a "detective-like expose" since then. Furculow and Mantz tested 17,000 school children in Missouri with histoplasmin and found 72 symptom-free cases of 'histo'. A Texas survey of children showed 4.5% positive to tuberculin, 7% positive to histoplasmin. No certain source was known for such cases . . . Recent reports have shifted from endemics to *epidemics*. More than 20 epidemics have been described, and most of them carefully studied by skin-tests, serology, chest films, and soil cultures. They occurred in the states near Missouri, but as far north as Wisconsin, east to New York, south to Texas, and west to the Dakotas. They involved groups as small as families, and as large as 35 soldiers. . . . 'Histo' is known as a rural disease, with more men affected than women, though one suspects that this may be due to a greater amount of exposure of men to a 'reservoir' in the soil. The fungus apparently has a mycelial form in nature, and a yeastlike ovoid form in infected tissues, where it is usually intracellular and stains best with P.A.S. (periodic-acid-Schiff) stain. It selects the reticuloendothelial cells (or vice versa) and produces a granulomatous lesion which may caseate and then become encapsulated, calcify centrally, or arrely evacuate. The granuloma is somewhat like TB, 'Cox', brucellosis, sporotrichosis, kalazar, and sarcoid.

The *mode of infection* seems similar to that of TB and 'Cox'. The 'primary' involvement may produce a varying amount of illness. A pulmonary lesion produces the lung and chest symptoms which one would expect in about 50% of the cases. Dissemination is to be feared, since it is highly fatal, but it is very rare. Old people are supposed to suffer most, and to have mucocutaneous lesions, but since the 'classic' picture of routine generalized involvment is now said not to be so, we may have to change our conception as we learn more.

Claggett reported 20 cases of the *disease* from the Mayo Clinic. Nineteen were diagnosed by culture from a dozen tissue sites. Most had fever and fatigue; 14 had chest lesions; 7 had oropharynegeal, liver and spleen lesions; 6 had adrenal involvment; and 7 had peripheral node enlargement. There were 11 deaths since diagnosis. Renal and adrenal lesions had the worst prognosis.

Epidemics have regularly been found to be associated with histoplasma in specimens of soil. Random dirt samples on farms were 1.6% positive but chickenyard dirt was 13.7% positive, and soil from bat caves, cowbarns, basements, and birdroosts was also highly contaminated . . . Dogs and rodents may develop the disease, but fowl rarely have infection or antibodies. Their role is uncertain.

The *lung lesion in endemic cases* seem to have their own x-ray characteristics. Two-thirds of the 72 cases found in the large St. Louis survey had sharply circumscribed nodules, and 25% had patchy irregular lesions. Occurrence of calcification is known to be central and to occur slowly. The older lesions often have a somewhat 'target' appearance, with the density decreasing from the 'bullseye' to he periphery . . . Another series of 65 cases had only 4 apical lesions (like reinfection TB), and only 3 cavities.

Skin-tests with histoplasmin are of uncertain value in individual cases. The test becomes positive 2 to 4 weeks after infection. There were only sixteen positives in a series of 31 known chronic cases, but 94 of 95 acute epidemic cases had positive skin-tests. The answer must lie in the fact that anergy developes gradually during the 5 years after infection, and in many 'disseminated' cases. The antigen is newly available from Parke Davis and Co. A standardized volume is diluted by 1 cc. of diluent, and a single dose of 0.1 cc. is given intradermally. An induration of 5 mm. or more is a positive reaction.

Bacterial studies of sputa are rarely positive, and in one series only 1 of 20 cases had a positive culture. Diagnosis can be made by biopsy,

but tissue cultures may help differentiate from toxoplasmosis, cryptococcus infection, Leishmaniasic, and one form of blastomyces.

Complement fixation is also an equivocal test. It remains positive for about a year. Dilutions of 1:40 or more are significant, yet in 17 cases of lung disease proved by resection 9 were negative and 8 were positive in the range of from 1:5 to 1:30 . . . There is also some cross-sensitivity with other fungus infections.

Data on 34 resected cases showed that 28 were male and 40% had lived in Panama. Thirty cases were skin-tested for 'histo', 'cox', and TB; 7 were positive to all three, 3 were positive for the fungi, 13 were positive for 'histo' and TB, 6 were positive only for 'histo', and one was positive only to tuberculin.

Thirty five *'round focus' lesions* examined at the Army Institute of Pathology had no known cause in 8, TB in 6, 'cox' in 3, and histoplasmosis in 18. 'Histo' is a more than ordinarily considered cause of such lesions . . . Other series of solitary dense lesions are found to have a neoplastic cause in 25 to 30 percent, and two recent reports on the value of the periodic acid-Schiff stain substantiate the findings of the Army study that 'histo' and 'cox' can be found by that method in a surprising percentage of cases.

It would seem logical to be highly suspicious of any pulmonary symptoms and of all x-ray lesions until the etiology has been decided. One should push ahead to a diagnosis if at all possible . . . Chemotherapy is apparently not yet effective, but better drugs can be expected and, when it seems legitimate, used in a controlled way . . . Excisional surgery should be considered for destroyed or cavitative pulmonary lesions, and infectious disease precautions used until the potential source has been eliminated . . . There is bound to be better understanding of fungus diseases, even in the next year or so, and we can both profit and help.

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HIRSUTISM

A resume of etiology and current therapy.

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HIRSUTISM is not welcomed by any girl or woman at any age, particularly abnormal facial hair. She becomes less feminine and more masculine in many ways, none of which increases her charm nor makes her happy. The daily chore of making herself attractive becomes an unwelcome task a part of which is the nuisance of shaving face, leg, and body hair. Such abnormal hair growth is with few exceptions evidence of a hormone imbalance. No matter what the basic cause of the endocrine dysfunction eventually proves to be, an absolute or relative excess amount of 11-corticosteroids or other hormones secreted by the adrenal cortex or of testosterone or of both, in conjunction with a relatively low serum estrogen level is the apparent factor which induces hirsutism in women (1) (2) (4).

An accurate diagnosis of the cause of this hormone imbalance in an individual is imperative before medical or surgical therapy can be intelligently prescribed. Study of thyroid and ovarian function must be correlated with adrenal and anterior pituitary function tests before any therapy is started. The longer the delay in starting therapy or the longer the hirsutism has exiisted, the more difficult is its cure or control. The important point is that most women at any age can now be cured of hirsutism or the condition kept under reasonable control with hormone therapy now available. Any woman who has been obliged to shave daily is very grateful when her abnormal hair growth has been controlled.

A list of the causes of hirsutism is here presented as an aid in the discussion of the problem:

A. Ovarian
   1. Sub-normal ovarian function.
   2. Non-functioning ovaries — the true menopausal cessation of function.
   3. "Cystic" ovaries and polycystic ovaries.
   4. Malignant and other tumors of the ovary.
   5. Congenital absence of ovaries.

B. Adrenal Cortex
   6. Congenital benign adrenal cortex hyperplasia.
   7. Benign hyperplasia of the adrenal cortex.
   8. Benign adenoma of the adrenal cortex.
   9. Carcinoma of the adrenal cortex.

C. Anterior pituitary
   10. Tumor, benign or malignant of the anterior pituitary gland.

D. Medication
   11. Testosterone.
   12. Cortisone and ACTH.
   13. Estrogen.

E. Surgical
   14. Hysterectomy.
   15. Removal of one ovary.
   16. Castration.

F. Idiopathic

G. Rare

1. SUBNORMAL OVARIAN FUNCTION

Fortunately for women in the period from adolescence until the climacteric poor ovarian function is the most frequent cause of the mild hirsutism frequently complained of to the family physician. Few physicians, parents or even husbands realize how many young women shave excessive hair growth on their legs. Many girls resent upper lip hair but do nothing about it. A considerable number shave regularly, a fact unknown by intimate friends and even their immediate family.

A few have hair removed by electrolysis.

Therapy regularly helpful to stimulate ovarian function and thus relieve hirsutism is thyroid extract grain ½ together with stilboestrol 0.1 mg. daily. If some improvement is not noted in three or four months, stimulation of anterior pituitary, thyroid (16) and ovarian function with pregnant mare serum hormone, eg., Gonadogen (Upjohn) regularly corrects mild hirsutism and other complaints. Response is slow but improvement continues for months. In younger girls cure is often attained.

It is often difficult to prove whether there is deficient FSH or LH stimulation (or both) of the ovary. Inability of the ovary before the natural menopause to respond to adequate anterior pituitary trophic hormone stimulation is, in my opinion, rare. I prefer to state that abnormal thyroid or adrenal cortex or both hormone secretions can block ovarian response to FSH and LH stim-

ulation by disturbing balanced anterior pituitary function.

2. NON-FUNCTIONING OVARIES.

Women in natural menopause who have gone into uneventful change of life uncomplicated by other endocrine pathology, are very commonly annoyed by excess chin and lip hair. There is now available a potent, long acting estrogen, Depo-Estradiol (Upjohn), which is very effective in controlling hirsutism as well as many unwelcome menopausal complaints sometimes resistant to therapy with other estrogen, oral or injectable. It appears that in menopausal women absolute estrogen deficit in itself predisposes to excess facial hair growth perhaps because of the relative hormone imbalance between the adrenal and ovarian hormones. Even though the adrenal hormone blood level is normal, the serum estrogen level in the true climacteric woman is regularly comparatively low. Since by definition the menopausal ovary is nonfunctioning due to natural aging, substitution therapy using estrogen in amounts adequate to relieve the complaints is indicated. Stimulating therapy is not indicated because the ovary cannot respond to anterior pituitary trophic hormones.

3. "CYSTIC" OVARIES AND POLYCYSTIC OVARIES.

What constitutes a diagnosis of cystic and polycystic ovaries? (1) (11) (12) (13). Too many ovaries are removed or mutilated because one or several cysts smaller than a lemon are found on an ovary during laparotomy. Such cysts can be punctured and the ovary left alone. Isolated cysts larger than a lemon may be excised, but the ovary should not be removed. (17)

Hirsutism, amenorrhoea and sterility are regularly associated with huge polycystic ovaries but rarely with the ordinary "cystic" ovary. Wedge resection of large polycystic ovaries (usually the procedure is performed on both ovaries) is a compromise with total removal and is justifiable. The operation may cause remission of symptoms for a few months in that menstruation may be resumed, but seldom is there much permanent improvement. Such "mentsruation" is usually estrogen withdrawal bleeding and does not become regularly cyclic. After several episodes of vaginal bleeding amenorrhoea commonly recurs. The hirsutism and sterility generally persist. While surgical cure is rare, stimulating endocrine therapy following wedge resection is today worth trying.

Failure of ovulation (rupture of the mature ovarian cyst) which is possibly the cause of ordinary "cystic" ovaries, might be due to lack of adequate anterior pituitary follicle stimulation hormone (FSH). Why the immature ovarian follicles fail to regress is unknown, but inadequate luteinizing hormone (LH) stimulation could be a factor. It is now well known that there are four important anterior pituitary trophic hormones which must be secreted in adequate balanced amounts to insure radiant feminine health:—

1. FSH which stimulates ovarian follicle growth and hence estrogen secretion by the ovary.
2. Luteinizing hormone (LH) which stimulates corpus luteum formation following ovulation following ovulation and hence secretion of progestin.
3. Thyroid stimulating hormore (TSH) which stimulates the thyroid gland to convert serum iodine into thyroxine as measured by the serum protein-bound iodine procedure.
4. Adrenal-cortico-trophic-hormone (ACTH) which stimulates the adrenal cortex to secrete cortisone and the cortisone-like adrenal steroid hormones.

When a woman is suspected or known to be not ovulating, there is usually clinical evidence of inadequate FSH secretion as well as inadequate imbalanced secretion of one or more other anterior pituitary trophic hormones. Therapy should therefore logically be directed at creating balanced hormone secretion by stimulating anterior pituitary function thus returning the thyroid, adrenal cortex and ovaries to normal function and normal balanced secretion of their hormones. With the hormones and diagnostic procedures now available, much can be done to relieve the hirsutism, prevent "cystic" ovaries by correcting their cause and abolish other associated symptoms. Basic therapy is the same as that for stimulating subnormal ovarian function. Therapy for polycystic ovaries following wedge resection is the same but in addition the suppression of excess ACTH secretion is usually a problem.

4. MALIGNANT AND OTHER TUMORS OF THE OVARY.

Rarely are tumors of the ovary encountered which masculinize a previously normal feminine woman by causing marked hirsutism, among other changes. This is an entirely different diagnostic problem than those just discussed. All

such masculinizing tumors of the ovary are not hopeless carcinomas. Therapy of malignant and other tumors of the ovary is prompt surgical removal about which there should be no controversy(1).

5. CONGENITAL ABSENCE OF OVARIES.

Congenital absence of both ovaries is rare but has been reported as a cause of hirsutism (14).

6. CONGENITAL BENIGN ADRENAL CORTEX HYPERPLASIA.

Congenital benign hyperplasia of either or both adrenal cortical tissue in young girls is the most common cause of female pseudohermaphroditism (8) (9). The individual seems to have been born a girl but her growth and sexual development make her masculine. Much can be done today for these unfortunate girls whose medical management is often difficult (10). Hirsutism is only one of their problems. Therapy is preferably started before adolescence. The diagnostic difficulties are often great and since considerable expense is inevitable, the economic problem often prevents or delays diagnostic study and therapeutic measures. Delay may cause the condition to advance until confusion exists as to the actual sex of the individual. Then referral to the large teaching institutions as charity patients is sensible and often the only chance to make life bearable for her.

7. BENIGN HYPERPLASIA OF THE ADRENAL CORTEX.

Benign hyperplasia of the adrenal cortex in the mature woman is an uncommon cause of hirsutism and other complaints. (3) (4). Rarely is hirsutism alone the symptom for which a woman seeks relief. While severe degrees of hyperplasia can usually be accurately determined, the mild degrees are difficult to detect. Laboratory measurements of serum steroid hormone levels are not generally available despite a tremendous amount of research (5). To quote Gardner, ". . . there is considerable evidence that the normal ovary produces androgen . . . as yet no adequate data seems to be available to indicate whether it is adrenal cortex or ovary that is hyperfunctioning in patients with idiopathic hirsutism. Improved techniques for the estimation of pituitary trophic hormones such as LH may provide the answer to the question."

The same problems of hormone assays for diagnosis are met in benign hyperplasia of the adrenal cortex as in idiopathic hirsutism. Blood serum assays for estrogens, androgens and adrenal cortex hormones which could be performed at reasonable cost by a local laboratory would be a tremendous help.

It is now generally known that cortisone and chemically similar adrenal hormones given in adequate dosage to control the collagen disease for which they are commonly used, will suppress ACTH secretion by the anterior pituitary. Such a condition is desirable as therapy for many medical purposes including benign hyperplasia of the adrenal cortex. Removing constant ACTH stimulation of the adrenal cortex sooner or later leads to partial or complete atrophy of the adrenal cortex which in itself is a potentially dangerous and at times a difficult condition to control. In an occasional severe form of hirsutism due to benign hyperplasia of the adrenal cortex such drastic medical therapy might be justified.

Total or sub-total surgical removal of both adrenals can be successfully performed today but will probably seldom be done for benign adrenal hyperplasia solely to cure hirsutism (6).

8. BENIGN ADENOMA OF THE ADRENAL CORTEX.

Hirsutism may rarely be due to a benign adrenal adenoma which causes the same clinical picture as Cushing's syndrome. Therapy is prompt surgical removal of the adrenal tumor as soon as the diagnosis can be accurately made. However, if tumor or carcinoma of the pituitary is causing adrenal cortex hyperplasia, no benign adrenal tumor will be found at operation. Accuracy in diagnosis is imperative to prevent useless surgery (1) (4) (7) (15).

9. CARCINOMA OF THE ADRENAL CORTEX.

When hirsutism and Cushing's syndrome are due to carcinoma of an adrenal gland, early operation is imperative. Such a growth can be present for months and not spread beyond the capsule of the adrenal gland. Fortunately, only one gland is usually involved. If surgery is not delayed too long, the hirsutism and the cancer is often cured (7). Diagnosis is not as difficult as formerly (1) (4).

An excellent comment on the differential diagnosis of adrenal cortex pathology is ably summarized by Laidlaw et al., (4) which is quoted in its entirety:—

"The clinical picture of hyperadrenocorticism

extends in a broad spectrum from Cushing's syndrome at one end to adrenogenital syndrome at the other. When the patient presents one or more elements of Cushing's syndrome, attention is focused on the adrenal cortex wherein may be found bilateral hyperplasia, adenoma or carcinoma. These lesions may be differentiated by the response of the urinary 17-hydroxycorticiods to ACTH. Patients with bilateral hyperplasia show a hyperactive response to ACTH; those with carcinoma do not respond. In three patients with adrenocortical adenoma, a normal response to ACTH was obtained; a fourth showed a hyperactive response The degree of automy of the adenoma probably determines the response of the tumor to ACTH stimulation.

"In contrast to Cushing's syndrome, the virilization syndrome may be caused by a lesion in either the adrenal cortex or the ovary. In such cases, a course of cortisone administration is instituted. If a dramatic fall in urinary 17-ketosteroids occurs, the causative lesion is presumed to be bilateral adrenal hyperplasia. In the absence of depression of 17-ketosteroid excretion, the lesion is considered to be either an adrenocortical tumor or a lesion in the ovary. In these instances, pelvic laparotomy is first performed. In the absence of a responsible ovarian lesion, the adrenals are then explored."

10. TUMOR OF THE ANTERIOR PITUITARY.

Cushing's disease is a comparatively rare disease complex in which an anterior pituitary tumor causes an otherwise normal adrenal cortex to become hyperplastic. Cushing's disease presents the same clinical picture as Cushing's syndrome only the cause is different. Fortunately X-therapy to the pituitary growth is now regularly successful and surgical removal of the pituitary gland is less frequently indicated (15). No adrenal surgery is indicated since adrenal cortex function is normal, but the glands are hyperplastic due to hypersecretion of ACTH by the anterior pituitary tumor. If irradiation is successful the adrenals resume normal function and the hirsutism and other symptoms of Cushing's disease gradually regress.

11. ANDROGEN MEDICATION.

When androgen medication is given to women, often in combination with estrogen for menopausal symptoms or osteoporosis, excess facial hair growth often soon becomes a problem despite relief from the complaint for which it was administered. In such cases stopping the androgen, commonly testosterone, is imperative and sufficient to stop the hirsutism (1).

12. CORTISONE AND ACTH MEDICATION.

The facial hair growth and typical edema of the face which commonly follows therapy with cortisone tablets is well known and today is usually recognized promptly (7). This type of hirsutism usually regresses slowly when the ACTH or cortisone therapy is stopped. If the medication is resumed all the symptoms of Cushing's syndrome will recur unless the dose is carefully adjusted to individual needs. For the occasional patient who has great difficulty taking urgently needed cortisone or ACTH for some disease without causing hirsutism and other undesirable side effects, other adrenal hormones are now available (3) which have a cortisone effect but are less likely to cause some of the complications. At times by combining an estrogen with a bile acid and salicylates, a potentiating effect is secured so that a smaller dose of cortisone is effective therapeutically.

13. ESTROGEN MEDICATION.

Large dosage of estrogen when functioning ovarian tissue is present will depress ovarian function by suppression of anterior pituitary FSH secretion. It is entirely analogous to cortisone effect on adrenal cortex function and thyroid extract on thyroid gland function. Ovarian function depressed or abolished by estrogen medication may cause hirsutism or may aggravate any hirsutism already existing. It should be evident that estrogens are NOT helpful in therapy of hirsutism in mentruating women. Stimulating therapy IS helpful.

14. HYSTERECTOMY.

A young woman regularly notes the onset of facial hair following hysterectomy even when both ovaries have been retained. It is a clinical fact that hysterectomy alone depresses ovarian function in many women frequently causing menopausal-like symptoms for which estrogens are often mistakenly given. Therapy to stimulate ovarian function is indicated.

15. REMOVAL OF ONE OVARY.

The common surgical practice to remove one ovary, while removing an appendix or performing other surgical procedure in a young woman because of "cysts" is not an innocuous procedure. It accomplishes little or nothing constructive. Following the operation all too frequently hirsutism and menopausal-like complaints become serious.

Even when hysterectomy has not been performed, the remaining ovary is often unable to carry the burden without help from stimulating therapy. When both ovaries are present, response to therapy is more abundant health.

16. CASTRATION.

Estrogen substitution therapy is necessary if castration has been performed prior to the natural menopause whether by surgery or irradiation. Therapy is usually much more complicated and unsatisfactory in the young woman than the simple estrogen substitution therapy of the natural climacteric. Therefore, when, during laparotomy in the premenopausal woman, ordinary "cystic" ovaries are found, it is suggested that the ovaries not be removed nor wedge resection performed. Puncture the large cysts leaving the chocolate cysts and any patches of endometriosis not readily accessible. With medical endocrine therapy now available or under investigation, many of these women can be returned to normal ovarian function. Such is possible only when the ovaries have been retained. Castration is an irrevocable tragedy. Few of these women are psychoneurotic. Their complaints are truly problems of ill health due to hormone imbalance.

F. IDIOPATHIC HIRSUTISM.

The pronounced black facial and body hair growth commonly afflicting women of the Mediterranean countries is possibly an idiopathic (1) or hereditary condition rather than an endocrine dysfunction. These women do not usually have a condition defined as hirsutism which is regularly encountered (5) with endocrine abnormalities. Some of these women can be helped by appropriate therapy.

G. OTHER CAUSES OF HIRSUTISM are medical curiosities rarely encountered.

Hirsutism is a complaint common to all these disorders. Some require prompt surgery. Others prolonged hormone therapy. An accurate diagnosis is imperative and the various possibilities should be constantly kept in mind. Never dismiss a woman with the statement that nothing can be done to relieve her abnormal facial hair growth. Today much can be offered in the way of control or cure if only she will co-operate in the diagnostic procedures and can afford the hormone assays and therapy.

In summary then, when hirsutism becomes annoying at any age the chance of a woman having a carcinoma or tumor of an endocrine gland is relatively small. Hormone imbalances readily amenable to endocrine therapy cause most hirsutism. Today there is medication available which will cure or readily control the mild degrees of obnoxious hair growth which commonly annoy women.

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SPINAL ANESTHESIA CAN BE SAFE*

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SPINAL anesthesia can be safe if it is administered by a physician who is well versed in the fundamental principles of anesthesiology and has a basic knowledge of the anatomy and physiology of the central nervous system. He must be familiar with the pharmacology and dosage of the agents used and should be cognizant of the indications, contraindictions and complications of the method employed. This physician must finally be willing to minutely observe the patient from the time of induction to the end of the procedure. These prerequisites for a safe spinal anesthesia are mandatory.

A physician's basic knowledge of the fundamental principles of anesthesiology is not enough in itself to guarantee the safe conduct of a spinal anesthesia. He must honestly and sincerely put these principles into practice. For example, it is not enough to know that a patent airway with adequate ventilation is necessary at all times. The physician must be astute enough to recognize minute degree of obstruction and depressed respiratory exchange and then be technically competent to manupulate the mandible in such a way that a free and open passageway exists from the external nares through the pharynx and glottic opening into the trachea. Blithely going through the motions of holding up the chin without accomplishing this objective is idiotic, tiring to the physician, and ultimately harmful to the patient. It is even worse not to recognize and correct the performance of this useless procedure. If the simple expedient of holding the chin does not create an open airway, then the physician must be able to properly insert a mechanical airway, be it metal, rubber or plastic. If the above does not suffice, then he may have to resort to the placement of nasopharyngeal or endotracheal tubes. The physician must both master the technical dexterity to place all these artificial aids, and possess the intelligence to recognize whether these aids are performing the functions expected of them. The mere fact that an airway is in the mouth or an endotracheal tube has been inserted does not in itself guarantee an open passageway. For instance, the base of the tongue may still be flush against the posterior pharyngeal wall due to slipping forward of the oral airway. Likewise, the endotracheal tube itself may become kinked or even inserted deep into a bronchus. These conditions must be recognized immediately and corrected.

If one wonders why this fundamental demand for a patent airway is stressed as a prerequisite for safe spinal anesthesia, it is because most deaths under spinal anesthesia are due to asphyxia. These deaths occur when the effects of premedication are so profound as to put the patient into surgical anesthesia, or when an intraventous barbiturate has been given to facilitate the introduction of the spinal needle or alleviate traction reflexes during the course of the operation. Any noisy breathing means obstruction and must be eliminated at once. Patients under the influence of depressant drugs are not merely snoring. They are obstructed.

Asphyxia also occurs when the spinal anesthesia level creeps cephalad and paralyzes the intercostal nerves. The phrenic nerves and medullary centers may also become involved. A fundamental principle of anesthesiology states that postoperative complications vary directly as the length of time of the operation and the depth of the anesthesia (or in spinal anesthesia, the height). Asphyxia associated with a high spinal well illustrates this law. Should the physician, even though aware of these basic truisms, be so unfortunate as to have asphyxia occur in his patient, he must be prepared to administer artificial respiration. This means that besides being able to establish a patent airway, he must be capable of ventilating the patient with oxygen and maintaining a normal circulation at the same time. Cerebral damage or cardiac arrest is the price to be paid should the physician fail.

A knowledge of the anatomy and physiology of the central nervous system, particularly the spinal canal and cord, is essential for the giving of safe spinal anesthesia. The physician should be familiar with the innervation of the part to be anesthetized. The nerve supply of any structure actually consists of three components — sensory,

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motor and sympathetic. It is not always enough to get a somatic sensory level of anesthesia adequate for the skin incision if the visceral afferent sympathetics from the area are also to be stimulated. This duel innervation is particularly seen in lower extremity surgery where a tourniquet is employed and in hernia operations where there is marked traction on the spermatic cord. Stimulation, by a tourniquet, of the sympathetics accompanying the blood vessels in a lower extremity may cause extreme discomfort to a patient even though the spinal anesthesia has blocked out all incisional pain. Profound drop in blood pressure has occurred during a herniorrhaphy when traction has been applied to the cord even though the rest of the operation has been uneventful under a supposedly adequate spinal anesthesia. This is because the sympathetic nerves enter the cord at a higher level than the corresponding dermatomes. Thus a higher level of spinal anesthesia is required when the sypmathetics are involved. Likewise, the degree of medullation of spinal nerve fibers is important in determining the amount of drug taken up by these fibers. This in turn makes for a more or less profound spinal anesthesia. It is necessary to remember that the dorsal or sensory roots lie in the posterior portion of the spinal canal while the motor or ventral roots emerge from the anterior portion of the canal. The preganglionic fibers of the sympathetic pathways arise in the intermediolateral horn of the gray matter of the thoracic and upper lumbar cord. Since spinal anesthetic drugs exert their effect not only on the roots but probably penetrate the cord as well, we can profitably apply this knowledge of anatomy to help accomplish a safe and satisfactory spinal anesthesia. The greatest concentration of the drug should be deposited on the dorsal roots and posterior portion of the cord with very little drug bathing the motor components. This deposition of drugs results in satisfactory anesthesia and protects the patient from the danger of intercostal or vasomotor paralysis should the anesthetic level reach the thoracic segments. The curves of the spinal column and the presence of the dentate ligaments are important anatomical barriers to keep in mind as they effect the height to which the drugs may ascend. A knowledge of the angle of inclination of the spinous processes at various levels determines the ease with which a spinal tap is accomplished.

The physiology of the central nervous system is as important as its anatomy. Unless the physician understands the functions of the autonomic nervous system he will be at a loss to explain the hypotension, bradycardia, constricted bowel, or epinephrine depletion of the adrenal gland in a patient under spinal anesthesia. For the same reason it is necessary to know the physiology of the cerebrospinal fluid, its site of formation, absorption, composition, amount, pressure, circulation, pH and specific gravity. For example, if one is not aware that the specific gravity of spinal fluid varies between 1.003 and 1.009, then one cannot make the proper selection of an anesthetic drug with the optimum baricity (hyper, hypo, or isobaric) in relation to the specific gravity of spinal fluid. The fact is well established that the more a patient is moved during the early phases of a spinal anesthesia the more chance there is of creating a hypotension. This can be eliminated by selecting an agent with the proper baricity which will immediately gravitate to the dorsal roots as the patient is being positioned for surgery. In this way the agent is "fixed" in the final operating position and no further turning of the patient is necessary. Thus a minimal involvement of the motor and sympathetic components occurs.

A physician should make no attempt to administer a spinal anesthetic unless he is completely acquainted with the pharmacology and dosage of spinal anesthetic agents. It can only lead to disaster. Specifically, the physician should be aware that spinal anesthetic drugs have various chemical configurations and are for the most part nitrogenous derivatives, falling into an ester and a miscellaneous group. Knowing this he is better equipped to select an alternative drug should the patient give a history of a specific drug idiosyncrasy. The ester group is by far the largest and includes most of the drugs in current use today. They are procaine, tetracaine, and piperocaine. Drugs in the miscellaneous group are not esters but compound products. Dibucaine is an example of a drug of this classification and being a quinoline derivative, it has a different chemical configuration than procaine and so can be used if there is a history of procaine sensitivity.

Selection and administration of the proper agent for the operation to be performed presupposes knowledge of several factors, one of which is the position in which the patient will be placed. Only in this way can a drug with the right

baricity be administered. A preoperative knowledge of the length of time it will take to do the proposed operation will help in determining the agents to be used, whether adrenalin should be added, or the continuous method employed. Another factor to be considered is the dosage to be employed. This should be calculated by exact weight of the drug given, not by ampules. The dose should be considered as so many milligrams of tetracaine and not as one ampule or 2 cc. The solutions injected into the spinal canal should also be at an optimum pH otherwise precipitation occurs. If the solutions are not at the proper concentration, nerve damage ensues. Knowledge of the rapidity of action of the anesthetic drugs as well as the time of their fixation will determine when surgery can start and when it is safe to radically change the patient's position. Placing a patient in a steep Trendelenburg position before a hyperbaric spinal anesthetic has had time to set may be fatal. In general, it can be said that the level to which a spinal anesthesia ascends depends on the following five factors:

1. Baricity and position of the patient.
2. Length of the spinal canal and anatomical variations in the normal spinal curvature.
3. Volume of the anesthetic solution used — the larger the volume the higher the level of anesthesia obtained.
4. Concentration of the agent.
5. Rate of injection of anesthetic drug — the faster the injection, the higher the level.

Knowledge of the average duration of action of anesthetic agents will help the physician to plan supplementation should the operation run over the estimated time. This knowledge should be augmented with the further knowledge that the sensory fibers are the first to be anesthetized and the last to recover. The sympathetic fibers are the next to be involved and may recover either second or first. The motor fibers are the last to be affected and are usually the first to recover. This information is of practical importance in the administration of a continuous spinal where supplemental doses must be given before the spinal anesthesia wears off. When this does occur, it is often difficult to reestablish a satisfactory level of anesthesia and larger dosages of supplemental drugs are required. Because of the effect of the agents on the motor and sympatheic fibers, one can be on the alert and recognize the return of motor tone, perspiration, rise in blood pressure, and restlessness as precursors to the return of sensory activity. Appropriate action can then be taken before a crisis occurs. It is also well to know that spinal anesthesia wears off from above downward. The perineum is the last dermal area to recover.

With this basic information at hand the physician should now consider the indications and contraindications for a spinal anesthesia and then weigh the advantages obtained from its administration against the complications that can occur. In general it can be said that unless there is a definite contraindication (these will be discussed later) against spinal anesthesia, this method can safely be used for anyone. Where there is a choice of several methods of anesthesia, certain relative indications for a spinal technique make this the method of choice. The indications can be listed as follows:

1. All operations below the umbilicus unless, as mentioned above, there is a definite contraindication to spinal anesthesia.—This does not mean that spinal anesthesia cannot be used for operations in the upper abdomen, chest, or even the neck. It has been used, and quite satisfactorally, for thoracoplasties and even thyroid surgery. It does mean that when the level of anesthesia ascends above the umbilicus the complications are increased and the safety factor is decreased. So, unless one can justify the added risk, it is much wiser to confine spinal anesthesia to lower abdominal and extremity operations.

2. Patients in whom difficulty in maintaining an airway is anticipated.—In these cases it is expedient to have the patient responsible for his own respiratory ventilation. This situation can occur with patients in bizarre operaing positions or when, because of an anatomical anomaly or pathological process, it is impossible to pass an endotracheal tube. If the operative site is below the umbilicus in these patients then spinal anesthesia may be more efficacious than an inhalation or intravenous anesthesia.

3. Relaxation. — Even though spinal anesthesia may give maximal relaxation this is a relative indication, as satisfactory relaxation can also be obtained with curariform drugs. Spinal anesthesia in addition to relaxing the abdominal musculature also constricts the intestines, thereby allowing more operating room in the abdominal cavity.

4. Presence of liver or kidney disease.—Spinal anesthesia causes no significent change in liver

function and does not affect glomerular filtration, tubular reabsorption, or urinary secretion unless hypotension or hypoxia are permitted to supervene.

5. Presence of certain metalolic diseases, such as diabetes.—There are no significant blood chemical changes under a well-managed spinal anesthesia. The carbon dioxide content of the blood is unchanged if respiration is not depressed. Likewise, the carbon dioxide combining power is not affected and the blood glucose is unaltered.

6. Presence of explosion hazards.—Spinal anesthesia allows the use of cautery and electrical appliances during surgery.

As can logically be seen, the advantages of spinal anesthesia depend on the absence of any contraindications. Contraindications are either absolute or relative. The only absolute contraindication is infection at the site of the lumbar puncture. It is obvious that no physician would deliberately introduce infection into the spinal canal.

The relative contraindications are:

1. Debilitation and shock.—The presence of a low blood volume in these cases makes spinal anesthesia dangerous. If hypovolemia is compensated and the involvement of the sympathetic component corrected, then spinal anesthesia can be given relatively safely. A continuous or fractional administration of spinal agents in these cases allows for better control.

2. Presence of severe hypertension or hypotension.—Here again it is not the spinal drugs themselves that are dangerous but the inability of the physician to manage the circulatory affects the agents produce by their action on the sympathetics.

3. Extremes of age and very apprehensive patients.—Although spinal anesthesia has been administered to all age groups, one must be aware that the very young and very old, like the apprehensive patient, may be psychically unsuited for this method. It is folly to administer a spinal anesthesia unless rapport exists between the patient and the physician.

4. Presence of respiratory disease.—Spinal anesthesia does not decrease the incidence of postoperative pulmonary complications and in some instances may increase their number. Partial intercostal paralysis resulting from a high spinal may well set the stage for an atalectasis. In patients with marked pulmonary secretions, an inhalation endotracheal technique can be employed for the primary purpose of performing a tracheal toilet.

5. Presence of intraspinal lesions or infections—If the pathological process in a spinal cord is arrested, as in post-poliomyelitis or traumatic transections, the administration of spinal anesthesia will do no further damage. If the spinal tap is purulent or persistently bloody, anesthetic drugs should not be injected.

6. Intestinal obstruction. — Since there is increased activity, tone and constriction of the bowel following administration of spinal anesthesia, perforation of a distended loop of gut adjacent to a mechanical obstruction can result when this method is used. Conversely, an adynamic ileus may be cured by spinal anesthesia.

In contemplating the administration of spinal anesthesia, the physician should be alert to the complications that can occur. These fall into two categories — the immediate and the delayed. The immediate reactions consist of:

1. Bloody spinal tap. — A bloody tap may be an indication of intrinsic central nervous system pathology or evidence of traumatic insertion of the spinal needle. If due to the latter cause, the spinal fluid will usually clear readily and it will be safe to administer the anesthetic drug. Should the bleeding persist, it is wiser to abandon the procedure and use some other method of anesthesia. The presence of an excess of blood in the canal may result in an unsatisfactory anesthesia because of the altered pH and specific gravity of the spinal fluid.

2. Too high an anesthetic level. — If intercostal paralysis occurs, resuscitative measures must be employed until the effects of the agent are dissipated. As mentioned above, these measures consist primarily of administration of oxygen under pressure, and fluids to maintain normal circulating volume. Atropine may be indicated to counteract some of the vagal effects that occur when the cardio- accelerator fibers are involved due to a high level of spinal anesthesia.

3. Hypotension. — This is usually associated with a high anesthetic level and is accompanied by peripheral vasodilation and bradycardia. It thus differs from shock which presents peripheral vasoconstriction with tachycardia. The use of a vasoconstrictor agent prior to administration of a spinal anesthesia will often prevent the immediate spinal hypotension, which of itself is not harmful if the hypotension is not too low nor excessively prolonged. Hypotension can easily

be converted into shock by unrecognized blood loss or sustained traction reflexes. Hypotension during spinal anesthesia should be recognized for what it is and appropriate treatment instituted.

4. Nausea and vomiting. — This complication can occur at any time during the course of spinal anesthesia and from a variety of causes. Traction reflexes, hypotension with hypoxia, apprehension, and drug reactions have all been implicated. Proper treatment depends on a correct interpretation of the etiology.

Delayed complications are:

1. Cephalgia. — not every headache occurring after spinal anesthesia is caused by the anesthesia. Postspinal headache is a typical and distinct entity. It is probably due to decreased intraspinal pressure from leakage of spinal fluid through the opening made by the spinal needle in the dura. This complication is the most prevalent reaction occurring after spinal anesthesia and can at times become incapacitating. Treatment is aimed at correcting intraspinal pressure. The incidence of spinal headache can be reduced by paying attention to the following details: having the patient well hydrated before operation, meticulous attention to the lumbar puncture, prevention of extreme hypotension, and the use of oxygen during the operation. Even without treatment all postspinal headaches will eventually disappear. The cause of other postoperative headaches should be searched for and eliminated.

2. Meningismus. — Some patients will complain of stiffness or pain upon flexing the neck after a spinal anesthesia. Mild changes in the spinal fluid may be found but a culture is negative. Headache is usually present. These symptoms are self-limited.

3. Meningitis. — This can either be a pachymeningitis or leptomeningitis. A frank, purulent, specific meningitis can occur and must be differentiated from a meningismus if appropriate treatment is to be instituted.

4. Nerve injuries. — Abducens palsy has been seen following spinal anesthesia as well as after administration of other types of anesthesia. Cauda equina syndromes have occurred and paresthesias in other specific nerves have been reported.

5. Paraplegia and quadraplegia. — These most dreaded complications are probably on a chemical basis and are caused by physiological transection of the cord by contaminents in the anesthetic solutions used. Prevention of contamination is the only answer to this problem.

6. Backache. — The local tissue trauma and hematomas resulting from the unskilled insertion of a spinal needle are, in many instances, responsible for this complication. The stretching of ligaments and muscles when placing patients in adverse positions under spinal anesthesia may also account for many of these complaints.

7. Hysteria and malingering.

Everything that has been discussed so far to make spinal anesthesia safe can be found in standard textbooks.(1,2,3) The final safeguard to secure the safe conduct of spinal anesthesia lies within the physician himself. It is the willingness to stay with the patient throughout the operation and minutely observe and correct any changes in the patient's physiology before these conditions progress and result in catastrophe. To do otherwise is gross negligence with all its ugly implications.

SUMMARY

An attempt has been made to present the factual knowledge necessary for any physician to have if he wishes to perform safe spinal anesthesia. A plea is entered to have this physician stay with the patient throughout the procedure rendering minute to minute care until the operation is completed. In conclusion it is well to remember that a spinal anesthesia is only as safe as the knowledge and ability of the physician administering it.

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PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE 37442

A forty-seven-year-old man was admitted to the hospital in an unresponsive and incoherent condition.

One week prior to admission he began to complain of general malaise. On the following day he developed a severe cough productive of large amounts of rusty sputum and subsequently began to vomit ingested food. Shortly after this he had a number of shaking chills and began to feel very warm, as though he had a "fever." He remained coherent and active, although the cough, fever and vomiting were unchanged. Three days prior to admission it was noted that he was less responsive and that he used his right arm and leg with considerable difficulty. Be became incontinent of urine and feces. A diagnosis of lobar pneumonia was made and he was started on intramuscularly administered penicillin. Shortly thereafter the coughing and vomiting subsided. However, the patient became progressively more drowsy, and twelve hours before admission he become totally unresponsive. It was noted that his respirations were rapid and accompanied by many crackles and bubbles.

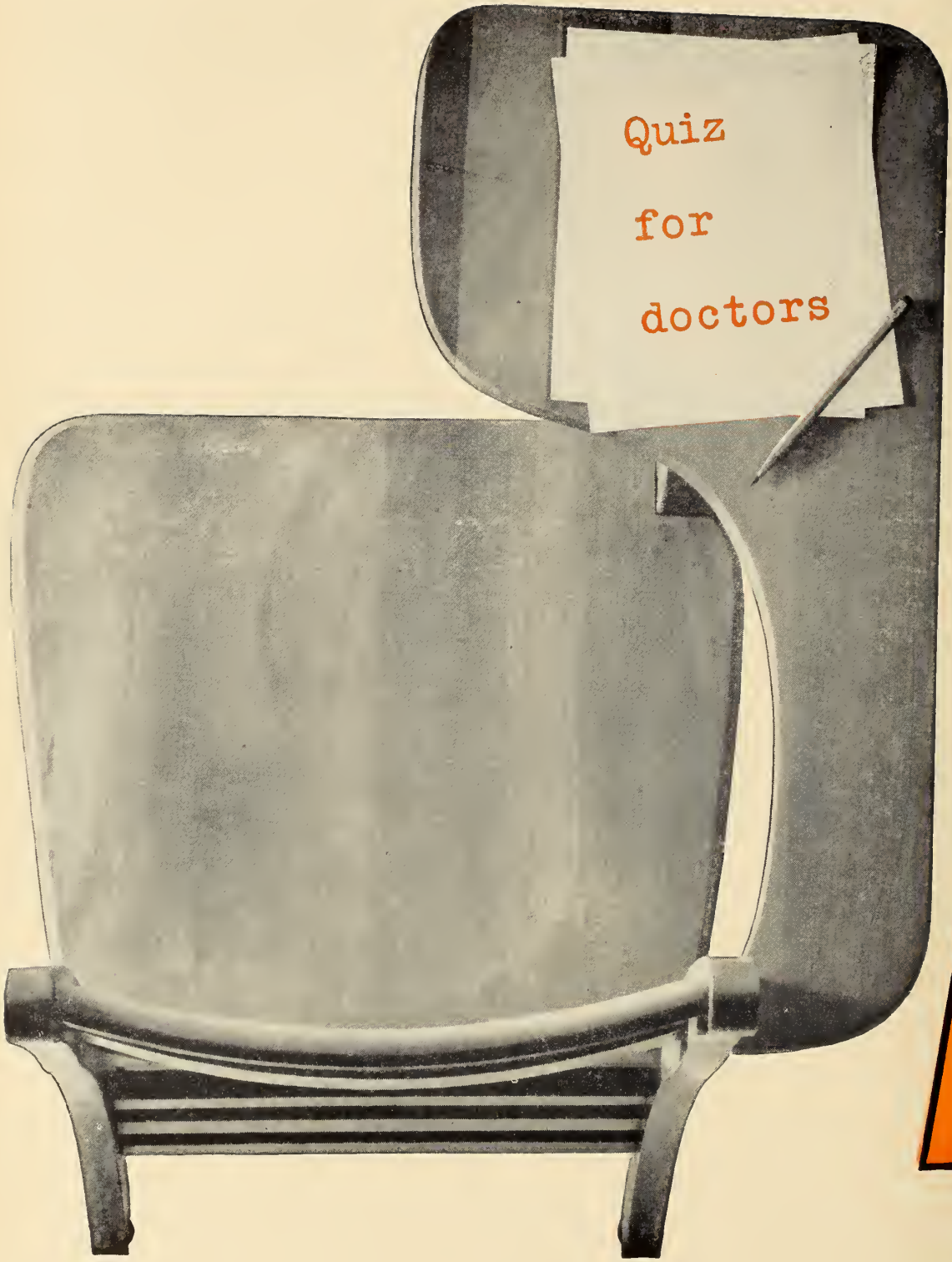
For many years the patient had "bronchial trouble," with a mild cough. One year prior to entry he had bronchopneumonia with an apparently uneventful recovery. For many years he had consumed large quantities of alcohol daily.

Physical examination revealed a sallow, semicomatose man propped up on pillows, with rapid bubbling respirations. The neck veins were flat. The heart was negative. There were coarse inspiratory and expiratory rales and rhonchi throughout both lung fields but no definite dullness. There was moderate clubbing of the fingers. There was no edema or cyanosis. He responded to painful stimuli only on the left side. The eyes were roving, and he seemed unable to see to the right. The pupils did not react. There was right-facial weakness and flaccid paralysis of the right arm and leg. The patellar, Achilles and radial reflexes were equal and active. The triceps and biceps reflexes were slightly more active on the left. Plantar reflexes were flexor.

The rectal temperature was 103.6°F., the pulse 120 and the respirations 40. The blood pressure was 150 systolic, 90 diastolic.

Urinalysis was negative except for a x albumin. A urine culture and smear were negative. Examination of the blood showed a white-cell count of 14,800, with 84 per cent neutrophils and a hemoglobin of 12 gm. A sputum smear revealed gram-positive cocci and gram-negative cocci, diplococci and rods. A throat culture showed abundant growth of alpha-hemolytic streptococci and moderate growth of catarrhalis. On lumbar puncture the initial pressure of the spinal fluid was equivalent to 220 mm. of water and the final pressure equivalent to 160 mm. of water. The fluid was cloudy yellow, and contained 7500 white cells per cubic mm., with 92 per cent neutrophils. The total protein was 1040 mg. per 100 cc., the chlorides 102 milliequiv. per liter and the sugar 37 mg. per 100 cc. The colloidal gold curve was 5555555555 and the spinalfluid Hinton test negative. Cultures of the spinal fluid grew Staphylococcus albus and B. subtilis. An x-ray film of the chest showed a clear right lung field and considerable density in the left upper lobe and probably in the lower lobe as well. A round shadow approximately 4 by 3 cm. was present at the level of the hilus. The heart was not enlarged.

The patient was started on streptomycin, penicillin and digitalis. Examination on the second day showed the following additional findings. The neck was stiff; there was pain on movement and a positive Kernig sign. The pupils now reacted to light. Eye movement to the left was normal, but to the right there was not only impairment of gaze but there was also a lack of conjugate movement, with the adducting eye not moving as far to the right as the abducting eye. The right plantar reflex was extensor and the



A

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left flexor. On lumbar puncture the spinal fluid was under a pressure equivalent to 230 mm. of water and contained 3500 white cells per cubic mm. The total protein of the fluid was 220 mg. per 100 cc., the chloride 118 milliequiv. per liter and the sugar 41 mg. per 100 cc., Culture of the fluid showed no growth. On the third day the spinal fluid was turbid and contained 1900 white cells per cubic mm., with 90 per cent neutrophils. By the sixth day the spinal fluid was clear and subsequently never contained more than 150 white cells per cubic mm. Physical findings remained unchanged, with the temperature ranging from 100 to 103°F. On the eleventh day the temperature rose to 105°F., the coma deepened and patient died quietly.

DR. JOHN A. EISENBEISS

The diagnostic problem today is that of a primary pulmonary disease with a cerebral complication in a 47 year old alcoholic male. The history and findings are those of chronic pulmonary disease (the clubbing of fingers) with an acute exacerbation of pulmonary infection. I will assume that the patient had bronchiectasis with a pulmonary abscess, pneumonia, and spread of infection through the central nervous system.

A few comments in regard to incidence of central nervous system complications of pulmonary disease: Of 40,000 autopsies done at the Los Angeles County General Hospital, 135 had metastatic brain abscesses; 65 were incident to disease of the lungs or pleura; 20 endocarditis; 7 septicemia; 5 liver and gall bladder infections; 3 subdiaphragmatic abscesses; 3 urinary tract infection; 3 infected spina bifida; 2 pelvic infections; 2 accessory nasal sinuses 2 tonsils; 1 each of teeth, face, esophagus and appendix; 1 incident to peritonitis; 17 were of unknown primary origin. 70 of these cases were single metastatic abscesses; 65 of the 135 were multiple.

With respect to location, the most common location was occipital and frontal, next parietal, (3) rarely, temporal, cerebellar, or brain stem, in location. In another series of 127 cases of cerebral abscess 558 were incident to bronchiestasis; 35 to empyema; 11 to purulent bronchitis; and 5 lung abscess. The age incidence of some 446 cases: 0-11 age years, 11%; 11-20 age years, 26.5%; 21-30 age years, 26.5%; 21-30 age years, 26.5%; 31-40 age years, 16.6%; 41-50 age years, 10.5%. The incidence as to sex in 576 cases: male, 389; female, 189.

Bacteriology and abcesses: The most common organisms are streptococcal, pneumococcal and stapyhlococcal, in that order. Therefore, if the impression of bronchiestasis and lung abscess is correct, the sex and age and location of this patient's brain abscess fit into the quoted statistics.

Neurologically, the patient had findings of a temporal isthmus lesion involving I assume, his major side, in that the patient was very likely right-handed, although this information is not given in the chart. The temporal isthmus is an area of white matter bounded by the vestibule of the lateral ventricle, laterally and anteriorly by the insula and posterior third of the temporal lobe. Through it run the fibers of the left occipital lobe for visual interpretation, as well as the fibers connecting Broca's area with the temporal and parietal lobes. Anterior and medial to it is the internal capsule. The patient's symptoms of right hemiparesis, involving the face, arm and leg, a right hemianopis and a right hemi-hypesthesia, as well as aphasia, though the depth of coma in the patient precluded evaluation of this, are classical for a lesion in this area. These findings are those of a subcortical lesion, and our concern is the mechanism of its development.

The acute phase of the illness, from onset to death, covers 18 days. On the day of onset the flare-up of his chronic pulmonary disease occurred. 4 days later the patient developed a bacteremia and an infected embolus lodged in the left cerebral hemisphere, or in a pial vessel over the left cortex. An area of cerebral softening developed, either an infarct or an area of red softening, due to arterial or venous occlusion then occurred. (No convulsion is noted in the history. This is frequent with subdural abscess, and may occur with subcortical abscess.) On the 7th day of his illness, an abscess is now developing in the area of cerebral softening with adjacent meningeal reaction, he became unresponsive and the right hemiparesis became a flaccid paralysis. No note of eye ground examination is made at this time. It would have been of some value to examine the eye grounds. The blood count is that of an infectious process. The findings on spinal tap, with a positive culture of staphylococcus, which is not the commonest organism found in metastatic infections from the lung to the brain; the cell, protein, sugar and chloride findings are all those of meningitis. The fact that the sputum revealed strep and other respiratory

infections, and the spinal fluid staphlococcus and B. subtilis makes one wonder if the latter organism is a contaminate, and this is of import in the differentiation of subdural abscess from subcortical abscess, in that generally, with a subdural abscess, no organisms are found in the spinal fluid.

On the 2nd day of admission, the 9th day of his illness, after administartion of streptomycin and penicillin, the patient was improved in regard to his depth of coma. His neck was now stiff, probably now noticable in that the patient's coma was less deep, and an early right sixth nerve palsy, or a loss of conjugate movement, laterally, which can occur with temporal lobe lesions, occurred; or, as described in the history, tre adducting eye not moving as far to the right as the abducting eye, suggesting that either loss of conjugate movement, or disturbance of conjugate movement, or a sixth nerve palsy was developing.

White cells in the cerebral spinal fluid were fewer in number and by the 6th hospital day, the 13th day of illness, the cell count in the cerebral spinal fluid was 150. At this time the patient should have had X-rays of the skull which would have shown a shift of the pineal body to the right. He should have then had Arteriographic studies, followed by trepination. The Arteriographic studies would have shown elevation of the sylvian group of vessels with lateral displacement and a medial displacement of the anterior cerebral group, and a subcortical abscess with cerebral softening in the region of the temporal isthmus (temporal parietal area of the brain), would have been found on trephination and needling of the area; or a depression and medial displacement of the sylvian group of vessels and a subdural abscess in the temporal parietal area would have been encountered.

Compare the course of the patient's illness with the life history of cerebral abscess; this is as follows: The infection reaches the pia or subcortical tissues by way of an entering artery, emergent vein, or a pervascular space, and because of the more abundant cortical blood supply, the infection does not localize in the cortex, but into the white matter, either by infarct (that is arterial occlusion) or hemorrhagic softening by venous occlusion. Now symptoms of encephalitis are noted. In 3 to 5 days equilibrium develops between the infecion and the reaction of the surrounding brain. The blood vessels throw off an exudate of leukocytes (the first line of defense). The blood vessels increase in size and number in the area and proliferation of connective tissue cells occur and a capsule is formed. Now the stage of battle is set. The capsule (fortification) and the leukocytes (defending troups) are pitted against the bacteria (the invaders).

On the 13th day of the patient's illness this was the local picture. During the subsequent 5 days the battle waged fiercely between the invaders and the fortifications and defending troops. The reserves, a trephination and a brain cannula to be inserted in the area, were not called into the battle, and on the 18th day the pressure and growth of organisms overwhelmed the cerebrum, and a midbrain hemorrhage, or rupture of the abscess and a subsequent pyoventricle occurred, this resulting in death.

This sequence of events could better have occurred before present-day antibiotics. The antibiotics now alter the course of the development of the brain abscess and its history is varied. Freqeuntly, only softening of the cerebrum occurs and death could have well occurred as a result of softening and edema of the involved area. There were several other factors to be considered. The patient was alcoholic. There could well have been a complicating subdural hematoma, unrelated to pulmonary disease and secondary miningitis, the patient recovering from his pulmonary disease and meningitis, only to expire incident to his subdural. The hemianopia speaks against subdural hematoma or subdural abscess, although it can be found in a cortical lesion such as these are.

My final diagnosis is bronchiectasis; pulmonary abscess; meningitis, purulent, healed; abscess, brain, left temporal isthmus, with adjacent cerebral softening and rupture into the ventricle (pyoventricle), or with a complicating pressure cone and mid-brain hemorrhage.

DIFFERENTIAL DIAGNOSIS

Dr. Maurice Fremont-Smith; A history of a patient admitted in stupor and whose family cannot be present is always unsatisfactory. Had this man had any sinus or ear infection? Had any headache preceded this condition? Because he had clubbed fingers, I should like to know how much cough he had and whether he had sputum.

Dr. Benjamin Castleman; Dr. Adams, can you answer any of those questions?

Dr. Raymond D. Adams; No.

Dr. Fremont-Smith; The urinalysis was negative except for a X albumin. I should like to know if there were any red cells.

Dr. Castleman; The urine did not contain red cells.

Dr. Fremont-Smith; The sputum smear was nonspecific. The throat culture showed alpha-hemolytic streptococcus, which is so common in the throat that it may mean nothing. The picture of the spinal fluid is interesting; it definitely shows a very severe bacterial meningitis. The chloride and sugar were low, both going with bacterial meningitis. The colloidal gold curve could have been of any type with the amount of protein that was present in that fluid. The cultures grew Staphlococcus albus, and there is no question about the fact that he had meningitis.

There was a statement that the heart was negative. I dislike statements like that. I should like to know more about the heart. The patient was given streptomycin, penicillin and digitalis. The neck veins were not engorged and the physicians thought he had no heart failure. Why digitalis? The second neurologic examination is the one that I think was the more careful one. The neck was stiff, with a positive Kernig sign. The eye movements to the left were normal, but to the right there was loss of conjugate deviation. Also on the right side there was paralysis of face, arm and leg and a positive Babinski sign, showing that he had some serious intramuscular lesion on the left. The conjugate movement of the eyes would be affected by a lesion somewhat anterior to the motor area. It is obvious that both the left motor and left sensory areas were involved, as he had lack of sensation on the same side as the paralysis. Hence, he must have had a severe lesion in the left cortex in addition to the meningitis. The interesting thing is that as the man grew worse and died the spinal fluid became better and cleared.

May I see the x-ray films?

Dr. James J. McCort; The x-ray films of the chest are not very helpful. They were taken with portable apparatus on a semicomatose patient lying in bed, and only anteroposterior films could be obtained. The right lung is clear and there is no fluid in the right pleural cavity. On the left side there is a hazy increase in density in the left upper lobe and the lobe is reduced in size, particularly in the region of the inferior and superior lingular segments. Adjacent to the hilum and in the region of the left-upper-lobe bronchus and the lingular bronchus there is an irregular soft-tissue density. A small amount of fluid is seen in the left pleural cavity. Both leaves of the diaphragm are in their normal position. No gross abnormality of the heart and vessels is seen.

Dr. Fremont-Smith; The things we know about this man are that he had a bacterial meningitis, an intracranial lesion and a condition that was called a pneumonia; it may have been pneumonia and may have cleared under the antibiotics. Apparently the antibiotics also cleared the spinal fluid. It seems to me that a collection of pus in the region of the left cortex or below the left cortex has to be considered as the focal point of the meningitis and the question is; Where did this pus arise from? It is very like a lesion below the diaphragm — a subdiaphragmatic abscess or a liver abscess that causes sterile fluid or even at times a slightly infected fluid above the diaphragm. I think the patient had something within the brain that broke through, causing meningitis, but that the meningitis was a secondary affair.

What could be the source of an infected bacterial lesion in the substance of the brain? Well, it may have been an embolic phenomenon. Subacute bacterial endocarditis, I think, rarely causes an actual abscess in the brain. An acute endocarditis with metastases might cause an abscess in the brain. That is one possibility, but there are a great many things against it. The heart was said to be negative. Almost always there is a loud systolic murmur with acute endocarditis. There was no evidence of embolic phenomena elsewhere in the body — the urine contained no red cells; the spleen was not said to be enlarged; there were no petechiae in the fingers or conjunctivas. As none of these were present, I think endocarditis is probably to be ruled out.

Another condition, — a very interesting one, — is subdural empyema — a condition described by Kubik and Adams in 1943. Subdural empyema is a condition that is not usually recognized, but if it is recognized the patient can sometimes be cured, as were two of their patients. It usually arises as a result of severe infection in the paranasal sinuses or in the ear. Dr. Kubik and Dr. Adams reported 14 cases, 13 of which arose from the sinus or the ear. There was one case that was metastatic from bronchi-

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ectasis. The symptoms are headache, stiff neck, fever, confusion, later coma, very frequently parcsis or paralysis of the opposite side, a conjugate deviation of the eyes, — inability to move the eyes to the paralyzed side, — and often convulsions. In none of these cases was there an actual bacterial meningitis. There were signs of meningismus, but the cultures were negative in all cases. In no case was the cell count as high as in this case. However, the condition does nced to be considered, as one can let out the pus through a burr hole, sometimes saving the patient by this procedure. I refer you to Kubik and Adams' interesting report.

The other possibility, — and the one that I thing is the most likely, — is that this man had a lesion in the chest, possibly bronchiectasis but more probably abscess. Bronchiectasis is usually bilateral, and it is often not visible in the plain x-ray films. I think he had a metastatic abscess from the lung to the brain, — either multiple or a single brain abscess, — and that such an abscess broke through the cortex and infected the meninges and that the patient therefore developed a bacterial meningitis.

Dr. Alfred Kranes; This man had clubbing of the fingers, so perhaps the chest lesion had been present for a long time. If it was, then perhaps it would be less likely to be an abscess than bronchiectasis with pneumonia—repeated pneumonias on top of the bronchiectasis.

Dr. Fremont-Smith; I think that is a good point. Repeated pneumonias are more likely to be subsequent to bronchiectasis than to an abscess.

Dr. Thomas Paine; There is one point about the bacteriologic studies; The spinal fluid grew out Staphylococcus albus and B subtilis. I think thc presence of B. subtilis raises a rather large question about the nature of the real infecting organism. I do not think one can believe that Staphylococcus albus was the real infecting organism here, since the other organism was present.

Dr. Fremont-Smith; Isn't B. subtilis much more likely to be a contaminant?

Dr. Paine; Yes, therefore, I must suspect that thc staphylococcus may also have been a contaminant.

Dr. John T. Stanbury; I wish the radiologist would consider the lesion in the hilum consistent with carcinoma in the lung. This might be an abscess secondary to carcinoma of the lung.

Dr. McCort; I do not see how one can exclude thc possibility of carcinoma of the left-upper-lobe bronchus on the basis of this limited x-ray examination.

Dr. Stanbury; This man was an alcoholic. Such patients are quite prone to infection with Friedlander's bacillus; that can give rise to lung abscess. I wonder if that type of abscess metastasizes to the brain.

Dr. Castleman; Any type of lung infection may metastasize to the brain.

Dr. McCort; Was a cytologic examination of the sputum done?

Dr. Castleman; I do not believe one was done.

Dr. Paine; What did the gram stains of the spinal fluid show?

A Physician; We saw no organisms.

Dr. Fremont-Smith; The fact that the chloride and sugar were lowered must mean that there were bacteria in the spinal fluid.

Dr. James B. Ayer; If the time relations given here are correct, this man was well until only a week before admission. Therefore, I hardly think he had a subdural infection of the extent that is suggested, and I also think the sinuses would have shown some disease. The fact that he was well and then acutely ill suggests bacterial meningitis, perhaps with the infection more severe on one side than on the other, which is not uncommon. I have seen cases of Staphylococcus albus meningitis that ran a mild course without specific treatment. B. subtilis is a fairly common contaminant. A small abscess as an initial point of infection is possible, but I think that a thrombophlebitis is more so. Death would not necessarily be due to meningitis. I suspect that there was something else, such as a block of the cerebral fluid, perhaps from medullary pressure.

Dr. Castleman; We have the two authors of the paper on subdural empyema right here. Dr. Kubik, have you any comment?

Dr. Charles S. Kubik; Of course, metastatic subdural empyema is a rare condition. The cell count in the fluid was rather high for that, as Dr. Fremont-Smith pointed out. The rapid course might suggest that possibility, but I should think that an intracerebral abscess would be more likely.

Dr. Adams; We saw this patient on the ward. The arguments that the Medical Service used were something as follows; This man clearly had a meningitis because of all these cells in the



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spinal fluid and the low sugar. However, the lateralizing signs came on so early and were so prominent that it was obviously more than an ordinary bacterial meningitis. Usually lateralizing signs in bacterial meningitis develop rather late in the second or third week of the infection and are often due to thrombophlebitis. In this case they were the first indications of intracranial disease. We assumed, therefore, that the patient had an abscess in the brain that had ruptured into the ventricle, or a septic embolus that produced focal areas of destruction and a bacterial meningitis. Unfortunately, the history was not sufficiently complete to determine by the rate of onset which of these two conditions had occurred. There was no source of embolus. Abscess was thought most likely, but since the patient was moribund when see the Neurosurgical Service thought he would not survive a brain operation.

CLINICAL DIAGNOSIS

Metastatic brain abscess.

DR. FREMONT-SMITH'S DIAGNOSIS

Metastatic brain abscess from bronchiectasis of the lung, with rupture into meninges.
Meningitis.

ANATOMICAL DIAGNOSES

Brain abscess, left parietal lobe (bacteroides), metastatic from lung abscess.
Ventricular empyema.
Cerebellar pressure cone.
Cirrhosis of liver, alcoholic type.

PATHOLOGICAL DISCUSSION

Dr. Castleman; The autopsy showed that the pulmonary lesion was in the inferior posterior portion of the left upper lobe. It proved to be a benign abscess that apparently had produced a metastatic abscess to the brain, which Dr. Adams will tell us about. There was a fairly severe alcoholic cirrhosis.

Dr. Adams; From the time the brain was first exposed, on removal of the calvarium, it was clear that it was abnormal. The surfaces were flattened, and the left cerebral hemisphere was much broader than the right — especially its posterior half. Over the left parietal lobe the convolutions were unusually broad and flat. The arachnoidal membrane along the base of the brain and over the posterior aspect of the spinal cord was opaque and whitish, but no subarachnoid exudate could be seen on gross inspection. There was a sizable left-cerebral pressure cone, compressing the medulla. Coronal sections of the brain disclosed a large abscess occupying the left parietal lobe; it extended almost from the superior frontal region back to the occipital region and inferiorly to the temporal lobe. It was fllled with pale-greenish exudate of fetid odor. When it was removed one could see that wall of the abscess was thin, rather pinkish and evidently lacking in fibrous connective tissue. The abscess extended from the cerebral cortex to the ventricle into which it had ruptured. The abscess was in a position to produce a hemiplegia, homonynous hemianopia and aphasic disorder such as were observed in this patient. The rupture into the left lateral ventricle was obviously responsible for the meningitis. Death very likely was related to the ventricular empyema and the cerebellar pressure cone.

Dr. Kranes; Was any organism cultured?

Dr. Castleman; The bacteriologic aspects were of particular interest. The abscess of the lung showed a predominance of Staphylococcus aureus, as well as many other organisms. From the brain abscess we obtained a pure culture of bacteroides. I think this is very significant and may explain the lack of response to antibiotics. Apparently the bacteroides organisms are quite unresponsive to antibiotics. Dr. Ropes, you have been studying this. Would you agree?

Dr. Marian Ropes; I agree; I think the evidence is still very poor concerning whether any chemotherapy or any of the antibiotics help. There are a few reported cases in which it seems possible they do. Because of the presence of Staphylococcus albus in some cultures it may have been assumed that it was the responsible organism. The bacteroides might not grow out for two weeks, and unless the cultures were kept a long while, — up to two weeks, — it might explain the absence of bacteroides in the spinal fluid.

Dr. Castleman; The staphylococci may have overgrown the bacteroides that was there.

Dr. Paine; That is certainly a good suggestion. Bacteroides is a very strict anaerobe. It does not grow unless one incubates the culture under strict anaerobic conditions for a long while.

The organisms commonly involved in

Acute Pharyngitis



Strep. pyogenes (8,500X)



Staph. aureus (9,000X)



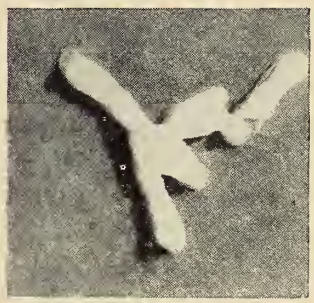
D. pneumoniae (10,000X)



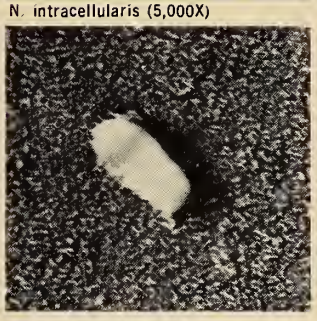
N. intracellularis (5,000X)



H. influenzae (16,000X)



C. diphtheriae (6,000X)



K. pneumoniae (13,000X)

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*TRADEMARK REG. U S PAT OFF — THE UPJOHN BRAND OF TETRACYCLINE

THE President's PAGE

"AGAIN quoting from the Economic Position of Medical Care, 1929-1953, by Frank G. Dickinson, Ph.D., and James Raymond, M.A., from the Bureau of Medical Economic Research, The American Medical Association, are more facts and summary."

COMPARATIVE EXPENDITURES, 1954

Medical care expenditures for 1954 were $10,594 millions. The sum was 4.48% of the $236,532 million for personal consumer expenditures. The number of dollars spent for each of the five main breakdowns of medical care expenditures was larger than in 1953. This is also true of expenditures for recreation, personal care, and jewelry, but there were actually fewer dollars spent for alcoholic beverages and tobacco. For only two of the Department of Commerce's twelve main categories were fewer dollars spent in 1954 than in 1953: about $90 million less was spent on clothing, accessories and jewelry and about $80 million less on transportation. Medical care and death expenditures for 1954 were $578 millions greater than for the preceding year, and only $3 million of this increase was for funeral and burial expenses.

More revealing than a mere review of the dollar figures is a consideration of each of these items as a proportion of total personal consumer expenditures. Expressing each subtotal as a percentage of the whole enables the reader to see quickly how the whole was divided and that changes in spending patterns are indicated by these division. In 1954, 32.2% went for food, 25.6% for housing (excluding capital purchases) and household operation, about 10.4% for the clothing category, and about 11.4% for transportation; slightly less than 5.0% went for medical care and death expenses, while somewhat more than 5.0% went for recreation. The alterations in the spending pattern were: about 0.3% less for food, about 0.5% more for housing, 0.3% less for clothing (a continuation of a fairly definite trend since 1945) and also for transportation, a very slight increase in the proportion spent on personal care, about 0.2% more spent on personal business, and 0.1% more on medical care and death expenses. Practically all of the latter increase was for medical care and drugs.

Harry E. Thompson, M.D.
President, Arizona Medical Association.

Editorial

ARIZONA MEDICINE
Journal of
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VOL. 12 NOVEMBER, 1955 NO. 11

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

DR. SIPPY

THIRTY years have passed since the death of Dr. Sippy. Those who are interested in peptic ulcer would do well to review the chapter written by Dr. Sippy in the 1924 issue of Oxford Loose-Leaf Medicine in the volume on Diseases of the Digestive Tract. The first impression gained from such a review would be the thoroughness with which the subject is covered. The second impression would be the very little information which has been accumulated, or added to our knowledge of the disease during this lapse of time. Dr. Sippy was a chemist and a keen research observer as well as a great clinician. The result was that his firm convictions on the subject of peptic ulcer were proved in the laboratory as well as in the living patient. In his heyday, Dr. Sippy had a hospital service averaging two hundred patients, about 25 per cent of whom had peptic ulcers.

Today the psychiatrists, who comprise a large segment of our most brilliant minds in medicine, are carrying the ball for the responsibility of peptic ulcer. This is a very pleasant situation for the rest of us, and I am sure few begrudge them for their courage in accepting this liability. However, Koch's postulates have not been fulfilled. So we are still searching for the exact etiology of ulcer. While Sippy admitted there were a number of possibilities, he considered the bacterial origin to be by far the most probable. He reasoned that bacteria reached the end arteries in the stomach wall. Then when the nutrition to these areas in the mucus membrane was interfered with by the obstruction of these end arteries, and these areas were subjected to the corrosive action of the gastric juices, ulcer was the natural result.

There were those investigators in Sippy's time who believed that free hydrochloric acid in the stomach had no connection with the development, or presence of ulcer. One of the best known was Professor Arthur Carlson, Professor of Chemistry at the University of Chicago. Professor Carlson is still alive. Dr. Sippy's classical quotation: "Whatever the future may reveal as to the causes of ulcer and the influences that retard its healing — results — may be obtained by maintaining an efficient neutralization of free hydrochloric acid—," has withstood the test of time. Dr. Sippy demonstrated in his own chemical laboratory that the three chemical agents which produced this condition in the greatest number of cases were; calcium carbonate, sodium bicarbonate and magnesium oxide. If Sippy could return long enough to survey the present status of medical treatment of peptic ulcer he, no doubt, would be quite pleased to learn that the introduction of the so-called cholinergic blocking agents have been a tremendous aid in controlling the excessive gastric secretions. The judicious use of these drugs, along with the alkalis, constitutes the main contribution to the treatment of peptic ulcer during these 30 years.

The subject most frequently argued by clinicians during Sippy's time was the relative results of medical as compared to surgical treatment. There were those who advised routine gastroenterostomy for a time. Sippy recognized the beneficial influence of gastroenterostomy in bringing about a cure of gastric and duodenal ulcer through reduction in the acidity, and particularly through accelerated emptying of the stomach, thus reducing the duration of the corrosive action of the gastric juice. He demonstrated that the real cures, or the wonderful relief of symptoms were directly proportional to the amount of pyloric obstruction produced by the actual amount of scar tissue narrowing of the pyloric ring. Dr. Will Mayo once remarked that if he had an ulcer of the stomach he wanted to be treated nine times medically before he would submit to surgery. Sippy fully approved of gastric resection for peptic ulcer, but during his time the mortality rate in gastric resection in the most expert hands was 14 per cent. If he could return today he would be very gratified to know of the tremendous advances surgery has made in the reduction of the mortality to where it is practically nil. However, he would still bemoan the fact that we are still waiting for some one to describe the exact pathological process which occurs in producing this disease. F.J.M.

UROLOGY AWARD

"UROLOGY AWARD — The American Urological Association offers an annual award of $1000 (First prize of $500, second prize $300 and third prize $200) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been graduated not more than ten years, and to men in training to become urologists.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Statler Hotel, Boston, Massachusetts, May 28-31, 1956.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1955.

NEW FILMS

A revised list of films available through the AMA motion picture library has been prepared and copies are available upon request from the Committee on Motion Pictures and Medical Television of the American Medical Association. This catalog lists 83 medical films suitable for showing to medical societies, hospital staff meetings and other scientific groups. The catalog also includes 36 health films of interest to physicians who may be called upon to speak before lay audiences such as service organizations, Parent-Teachers' Associations, etc.



TOPICS OF *Current Medical* INTEREST

RX., DX., AND. DRS.

By Guillermo Osler, M.D.

IF you are spending ten minutes reading this column you may charge it to the big fat total of time which the average physician gives to MEDICAL EDUCATION. The Council on Medical Education and Hospitals, thru D. D. Vollan, says that the work week is 60 hours, and the time spent in 'keeping up' is 10 hours. This includes staff meetings, medical societies, formal courses, deep reading, and THIS (which should count double because people sometimes have to read it twice.)

What does the law say about 'EXPERIMENTAL THERAPY? 'Can we use methods or drugs before they do in That Other Clinic? Should we let the patient heckle us into trying a new treatment? . . . Medicine is progressive, changing, but the law demands on precedent and is conservative. 'Newness' of a method is not the same as 'experimental'; if it has been used successfully it is not experimental. Trail-blazers, however, are often near the courtroom door. They must use extra skill and diligence. They may well use the following steps, suggested by Swetlow in 'Medical Economics',—

1. Get the patient's consent in writing.

2. Be sure that the document explains the experimental nature, the risks involved. Be sure he understands.

3. Obtain corroboration from other qualified physicians of the advisibility of the procedure.

4. Have 1 or 2 qualified M.D.'s witness the job to attest to skill and diligence.

And be sure, we say, to insure.

A haunting question was also asked in 'Med. Econ.' many long months ago by Rutherford, — Do Patients ACCEPT Your Advice?" . . . A doctor, he says, most often offends his patients by giving the right advice the wrong way. Advice-giving is ticklish business, and the advice may be what the patient doesn't want to hear. . . . Some doctors have developed techniques which are nearly foolproof, which is what we all want to hear, — 1. Lead your patient to the psychological point at which he'll be most receptive to the advice. (Explain the situation. Talk.) 2. Let your patient feel he has a hand in making the decisions that will affect him. (Suggest, not dictate, advice. Let the patient talk). 3. Spare your patient embarrassment by taking a factual, dignified approach to intimate subjects. (Don't create an earthly or pool-room atmosphere). 4. Try to make your disagreeable advice palatable. (Sugar-coat the pill. Make him feel noble and unselfish. He can be helpful to his family by accepting. He is courageous. 5. Be prepared for the patient who, having considered your advice in its most beguiling aspects, still won't have any part of it. (Again, let him talk. Repeat his arguments. Tell him that he has the right of decision. And 'leave the back door open' for a change of mind).

The use of a SELENIUM DISULFIDE suspension (Selsun of Abbott Labr.) for seborrheic dermatitis has been somewhat cautious, due to fear of a chemical or allergic reaction . . . . Shapiro and colleagues of Galveston, Texas, now state that NO untoward reactions have been seen in 4 years of frequent usage.

A recent issue of the Pfizer 'Spectrum' (J.A. M.A.) starts off an article about the plethora of medical tests by saying "ONE REASON WILLIAM OSLER NEVER GOT VERY FAR is that he knew nothing about cephalin flocculation" . . . This fits the first commandment for good composition to perfection, — get their attention with a brief, punchy statement, and that lead-off is 'punchy' in every sense of the word. . . . The article suggests that the trend is towards diagnostic boxes (like Abram's), and blood analyzers. Maybe he never heard of the 'Hemo' machines which the naturopaths began to use about 1940 (and maybe still do).

The 'Year Book of Medicine' usually gives new information on well-known diseases, but the 1955-56 issue is notable for CONDITIONS AND METHODS WHICH ARE STILL FAIRLY OBSCURE, e.g., Iceland Disease, Fibrogenopenia, Hypoprothrombinopenia, Vectorcardiography of Infarction, and Primary Aldosteronism. . . . THE TITLE of a recent UCLA medical lecture is also intriguing, — 'The Oligemic Syndrome'. .It wouldn't be hard to connect it up with the word more commonly used for the condition, once you think hard. Shock, this is.

ANOTHER OBSCURE 'ENTITY' is called Sjorgren's syndrome, and it has been used as a basis for a report on the smallest possible series . . . It is supposed to consist of rheumotoid arthritis, plus lacrimal and salivary hypofunction, plus an occasional deficiency in sweating. This should be rare enough, and seldom recognized like Kartagener's triad and Behcet's syndrome. The report of ONE CASE says that Meticorten' was effective, confirming occasional good results with ACTH and Cortisone. . . .

For those who dislike names for syndromes what else would you suggest for the lengthy list of involvements called Sjogren's.[2]

If you have ever brightly said "Well, you can't die by just holding your breath!" it may come as a minor shock to know that V. J. Derbes and A. Kerr Jr. of Tulane have written a book on 'COUGH SYNCOPE,' and include a discussion of "VOLUNTARY DEATH BY BREATH HOLDING" . . . They believe that cough produces a definite syndrome. We intend to compare the discussion with that of the 'hyperventilation syndrome'.

Speaking of the HYPERVENTILATION SYNDROME, one can find more modern reports than those of the Mayo Clinic. The late J. M. Schimmenti of Oakland wrote on "The hyperventilating type of human female" (J. Nerv. & Ment. Dis.) . . . Anxiety is the basic cause. The deep breathing is often unconscious. The symptoms may come from a respiratory alkalosis (neuromuscular excitability, with twitching and tremors, hyperreflexia, etc.). Increased sensory perception may result in hyperesthesia of the skin, low pain threshold sensitivity to odors, noises, and tastes. Cold, clammy hands and feet are notable. Headaches are common, with vertigo and tension in the neck. Increased pulse pressure, tachycardia, and premature beats may be found. . . . Anxiety is basic to all of these signs and symptoms. There are phobias, poor marital adjustments, and the patient's troubles often spread to produce EMOTIONAL ILLNESS IN OTHER MEMBERS OF THE FAMILY. . . . The 'hyperventilation test' is diagnostic, — breathe deeply 60 times a minute for 3 minutes. Voila! All symptoms occur or are worse. All lab tests of blood, breath and urine reflect an alkalosis. . . . Treatment is difficult except in mild cases . . . . (Someday we may write an adjunct paper to this one. Look for it, — G. Osler, ARIZ. MED., July 1958: The Effect on the Physician of Hyperventilation Syndrome in Women).

Several articles on ACNE have accumulated this summer, and the title of one (by R. E. Osbourn in the D.C. Medical Annals) shows its urgency, — "ACNE VULGARIS, THE SCOURGE OF YOUTH" . . . Adolescence is a critical time of life. Half of adolescents have some degree of acne. All of it is unpleasant; some of it continues to scarring; and most of it causes mental and social torture. . . . Treat it early and actively. It is related to gonodal activity, but the original ideas about the connection are not true. The sebaceous glands are under the 'dyshormonal' influence (wrong androgen/estrogen balance), become overactive, plugged, infected, etc. . . . Eliminate constitutional disease and infection. Correct several dietary factors by excluding greasy and fatty foods, chocolate, excess sweets, and sea food (due to their iodine content). An Archives of Dermatology article by S. W. Barefoot suggests, since bromism can be prevented by nicotinamide, that the drug be used on the basis that iodides and bromides aggrevate acne . . . Wash the skin often with soap and water. Trade lotions, mostly containing sulfur, are useful. Evacuation of comedones and cysts may help. 'Sanding' should only be done by an expert, as should carbon dioxide slush. . . . Estrogens may be used at intervals in girls. Antibiotics are expensive, but prolonged use of small doses may be very effective. X-ray therapy is occasionally indicated. . . . Ultraviolet lamps, progesterone, and vitamin A are of no value. . . . Lawrence of San Francisco (author of 'Care of Your Skin') has written of the emotional problems in the acne patients in 'The Merck Report'. He is not impressed by a dietary influence on etiology or therapy. . . . Emotional disturbance may be a cause or effect, but it exists. A review of possible connections to ambivalence to parents, dependence vs. independence, inferiority feelings, preoccupation with sexuality, etc., all seem to this columnist to be coincidental. They may be worsened by the presence of acne, or it may be traumatized by an unhappy youth, but the psychosomatic relationship is by association and not by way of the nervous system.

SARCOIDOSIS has baffled a great many wise men of the past, including Pinner and Longcope. It still provokes arguments about diagnosis and etiology. . . . The article by Rogers and Netherton in the J.A.M.A. last year on the probable HEREDITARY TENDENCY should be remembered. Their pair of identical twins had sarcoidosis, and they found 2 other sets with the same experience. This might point to neoplasm rather than infection, heretofore the favorite cause.

Drs. Custer and Klassen have called attention to THE DIFFERENTIAL DIAGNOSIS OF BRONCHIOGENIC CARCINOMA and virus pneumonia. Twenty per cent of their 117 carcinoma patients were diagnosed wrong (and long) as 'virus' or 'primary' pneumonia. . . . Pneumonia which recurs is suspicious. A lesion which PARTLY clears, with a drop of fever, is suspicious. . . . Delayed resolution of pneumonia is of course possible, and certain types often do so (K. pneumonia, D. pneumoniae Type III, Strep., Staph., P. tularensis, septic emboli., TB., and the viruses). . . . They urge a high index of suspicion and thoroness of examination.

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ARIZONA Pharmaceutical PAGE

GENERIC OR BRAND NAME?

By Newell Stewart

IT HAS BEEN my experience as a retail pharmacist, a board of pharmacy secretary and as one closely connected with the pharmaceutical industry that we have much to consider on the question of medical care costs. The advent of the newer forms of medication, beginning in the middle 1930's, has provided a field of opportunity for the treatment of disease, unheard of in all past history. Total cost of medical care in the United States approximates fifteen billion dollars annually, a figure representing less than five per cent of our national income. This figure may be broken down further with the statement that total cost of medications account for about 10% of the overall medical costs of our people, presently amounting to about one and one-half billion dollars — less than ½ of 1 per cent of the national income.

It is not necessary for me to outline the increasing health consciousness of our expanding population which, together with the present earning power of the average citizen, has contributed in a large measure to the demands being made upon the health professions to provide continued advances in the armamentarium of medications. The progress we have made in drug discovery has been accomplished to some degree by the large amounts of money made available from ethical pharmaceutical firms for research studies and grants. Today our industry is expending in excess of one hundred million dollars annually for this purpose. The materials we are receiving from this investment have caused an explosion in drug therapy. Diseases are being conquered, life expectancy has been advanced, and the general health of our nation has improved at a rapidly accelerated rate. The manufacturers who have furnished the pioneering efforts in this advancement have marketed their products under brand or trade names in order to identify their preparations.

This progress of the past two decades has been made available to the public because of our heritage of incentive returns. This country of ours is not, has never been, our hope is, never will be given over to socialization. One of the most expensive ingredients entering into any prescription is the well recognzied and justified professional dispensing fee which covers not only the knowledge of the pharmacist and the time consumed in filling the prescription but also the intangible factors of responsibility imposed upon him by the laws of his city, state and nation.

Drugs were once dispensed under the generic name system. They still are in countries where great research institutions do not exist. This system provides little incentive for "risk money" in the field of research.

Many factors enter into the acceptance of a particular brand of drug as opposed to dispensing under the generic name. These would certainly include a variable ph., disintegrating time, insoluble enteric coatings, palatability, solubility and caloric values, to name a few, which might tend to produce unanticipated results and actions for the patient.

As was quoted in the booklet "I Hate to Buy Drugs, But . . .", recently distributed by the National Pharmaceutical Council, "The public gets the benefit when an important drug really gets into mass production." When we consider the fantastic reductions made in the prices of all of our newer drugs as they have come into general use, together with the time and money-saving end results of faster recovery from so many dreaded diseases, I believe we shall have to agree that dollar for dollar we are now furnishing the public with bargain medications.

The organisms commonly involved in

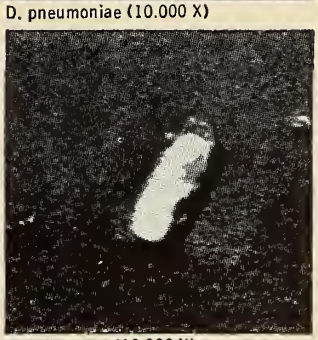
Tracheobronchitis


Str. pyogenes (8,500 X)


Staph. aureus (9,000 X)


D. pneumoniae (10.000 X)


K. pneumoniae (13,000 X)


H. influenzae (16,000 X)


H. pertussis (7,500 X)

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*TRADEMARK, REG. U.S. PAT. OFF. — THE UPJOHN BRAND OF TETRACYCLINE

Notes from the EDITORS PEN

"MEDICAL HORIZONS" — TV PROGRAM

"Medical Horizons", a new half-hour television series, presented by CIBA Pharmaceutical Products, Inc. of Summit, New Jersey, in cooperation with the American Medical Association, will be premiered on Monday evening, September 12, over ABC-TV, as announced by T. F. Davies Haines, President of CIBA. The new documentary series will promote the American way of medical life by presenting specific accomplishments in the field of medicine brought about by the teamwork of modern medical research, education and practice.

The program will be presented each Monday evening from 9:30 to 10:00 p.m., New York time, and will be seen on a network of 45 ABC-TV affiliated stations for a minimum of 26 weeks. Stations in the Pacific and Mountain time zones will receive the program on a two-week delayed basis via kinescope film.

DOCTORS — TAKE NOTE

The House of Representatives passed HR-7225, expansion of Social Security, Monday, July 18th, by a roll call vote of 372 to 31 under a procedure (suspension of rules) barring amendments, limiting debate to forty minutes and requiring a two-thirds vote of approval. The passage of HR-7225 by the House is a sordid story. A handful of men (House Ways and Means Committee) wrote the bill in secret, denied citizens the right to express their views, demonstrating disrespect and distrust of their House colleagues. It provides for the compulsory collection of an additional $2 billion per year of taxes and compels another 200,000 individuals to participate in the unsound and immoral sceme of Social Security. The Senate Finance Committee will hold open session to hear administration views and decide whether or not to have public hearings.

The AMA opposes the section of the bill that would set up a national compulsory disability insurance program, maintaining that such a program would project the government into the medical care field because of the necessity for regulating medical determination for disability. Your Association joined AMA in vigorously opposing the House decision to deny public hearings on so important a measure and opposing enactment of the bill at this time.

Mrs. Hobby said that no action should be taken in this direction at least until HEW has had time to evaluate operations of the "waiver of premium" enacted last year. She also said Congress should learn more about the relationship between rehabilitation, for which a new program was enacted last year, and cash payments for disability, implying that the temptation of cash payments might lessen a disabled worker's interest in rehabilitation.

The Congressional Record of July 18, 1955, page 9304, shows that Representative Rhodes VOTED FOR passage of HR-7225, and that Representative Udall did not vote but was paired with Mr. Crumpacker of Indiana. This was a "general pair", therefore it is not possible to ascertain whether or not Mr. Udall favored passage. In any event none of our Representatives positively opposed passage of this bill.

BOARD OF MEDICAL EXAMINERS — STATE OF ARIZONA

Of interest to all members of the medical profession is the recent appointments of Governor McFarland to membership on the Board of Medical Examiners of the State of Arizona, July 25, 1955, for terms of three (3) years each expiring June 30, 1958. They are: Carl H. Gans, M. D. (reappointed) of Morenci, and, Zenas B. Noon, M. D. of Nogales. They with present incumbents Drs. Harry T. Southworth, President, (Prescott), Orin J. Farness, First Vice President (Tucson), and Maurice R. Richter, Secretary-Treasurer (Phoenix) comprise the Board membership of five. Dr. Gans is Second Vice President.

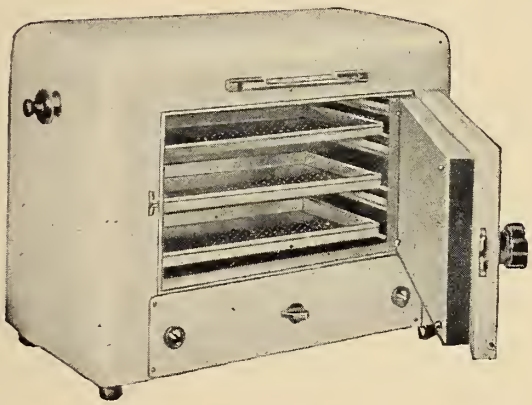
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New medical problems have arisen since the very great increase in use of agricultural chemicals including insecticides and pesticides. Since many of our readers are in portions of Arizona where such agricultural chemicals are used extensively in crop dusting operations and otherwise, we call attention to the latest annual revision of "Clinical Memoranda on Economic Poisons." This booklet is prepared by the U. S. Public Health Service, Communicable Disease Center, Technology Branch, Savannah, Georgia and is being made available free upon request to the National Agricultural Chemicals Association, 1145 19th Street, N.W., Washington 6, D. C. It is much more comprehensive and informative than its modern title suggests.

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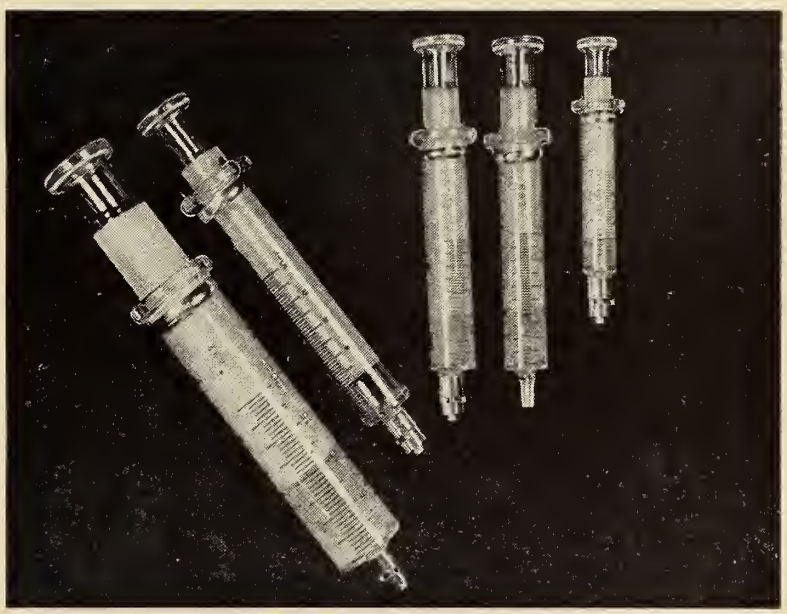
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Organization Page

CIVICS

Norman Ross, M.D.

PHOENIX INDIAN CENTER, 28 Wall Street, Phoenix, Arizona, Leon Grant, Director.

TO FOLLOW is a short history of the Phoenix Indian Center and a list of its hopes and needs. To our knowledge there are no other non-sectarian Indian centers in the state and only one church center is maintained and that in Flagstaff, Arizona. It is interesting to note that probably the largest and best known Indian Center is in Los Angeles, that this center was actually sectarian in origin, Quaker, and that it is now operated and financed entirely by the Indians themselves.

The Chairman of the Board, Mr. Walker, sent samples of literature produced by the Director and Board plus that of the Indian patrons. He advises that the Phoenix Indian Center would be pleased to furnish like material to physicians, to medical associations or other organizations that are attempting to improve the lot, health, and social position of the American Indian.

He states that they are particularly interested in continuing the interest of the medical profession and our help as he feels that only physicians can cut down the incidence of disease and ill health among the Indians and thus curb the spread of diseases which are so common among the Indians to the white man. He feels that the health of the Indian is of equal importance too, and would probably be the greatest single item in the process of integration.

The need for the Phoenix Indian Center was discovered by a court probation officer. It was he who pioneered the social agency, contacting the Cook Christian Training School in Phoenix because of problems of delinquency among the Indians.

The following is quoted verbatim:

"The only central location that could be had for low rent was off a dirty alley ironically named Wall Street. There, in the basement at No. 28, was a filthy room that could be rented for $10.00 a month. Above it was a liquor warehouse of sorts where during the hot weather the beer bottles would explode and the beer would seep thru the ceiling.

Dr. Nace of the Mission Board of the National Council of Churches (Lutheran, Presbyterian, Baptist, Methodist, etc.) was contacted and the Board allocated $2600 to clean up the place, hire a director of activities, etc.

Until this Center was set up, there was no place for the Indian coming in from the Reservations to go except to the undesirable places in town where he was made welcome but which were detrimental to him and his family.

Many Indians do come from the Reservations looking for work, for homes and for church homes. The aim of the Center is to help these people.

Judge Pensinger has told us that he has found much assistance from the Center in an understanding of how to deal with Indian problems. Invariably he seeks the counsel of Leon Grant in Indian cases.

As the Center grew in popularity and needed larger and better quarters, they added three rooms upstairs, bringing the rental up to $55.00.

The John F. Long Construction Company donated the material and labor to plaster and renovate the Center, installed necessary plumbing and other features.

In 1954 the National Council withdrew its financial aid and a group of Phoenix business men assumed the responsibility. They were in charge for a year and in February 1955 it was requested that the Cook Christian Training School assume the responsibility of financial and whatever other aid the Center needed.

Mr. Leon Grant, an Omaha Indian, is in charge of the Center at a salary of $250.00 a month. The Cook Christian Training School furnishes him and his family a house on its Campus. He is a graduate of this school. His wife is a Navajo and they have four children.

LOOKING AHEAD

At present the Center is open only until 5 P.M. It needs additional funds to enable it to hire an assistant director who would take over in the evenings, during vacation times of the regular director and at other times when he must be away from the Center. Evenings are times

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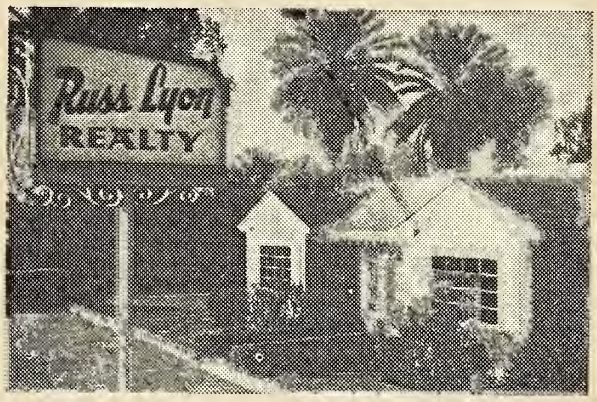
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when bars and other questionable places attract those who have no other place to go.

It is hoped that in the Fall the Center may have some activity for each night except Sunday. These are some of the plans they have in mind.

One night a week for Indian fellowship and prayer meetings, led by people of the various churches in the Valley.

One night of movies. The Standard Oil Company will release films to the Center when they can supply a projector and screen.

One night a week for teenagers.

One night a week for Indian Arts and Crafts and telling of Indian legends.

One night a week for library.

It is also hoped that they can fix up the basement for recreational purposes such as Ping Pong, Pool, Checkers or other games. The basement will have to be replastered and painted.

APPEAL

Some people have seen only the unpleasant side of the Indian. However, is it not the fault of the White Man that the Red Man has not had the advantages to help him grow into a desirable citizen? With understanding and education the Indian can climb to unheard of heights. One old Pima saint put it this way, "My white friends, you Christians are pulling us up out of the hole of bad living. PLEASE, Mr. White Man don't let go that rope."

LIFE INSURANCE ASSOCIATION OF AMERICA, 488 Madison Avenue, New York 22, New York.

The Editor-in-Chief forwarded to this office two pamphlets, one the Preliminary Report on the Annual Survey, the Extent of Voluntary Insurance Coverage in the United States; the other pamphlet consisted of a number of charts sent by the Health Insurance Council of this same agency. As has been previously reported the Health Insurance Council and the Life Insurance Association of America will furnish you this most interesting material request.

In that voluntary health insurance coverage has been reported at the national level on numerous occasions on this page, and in that the Blue Cross and Blue Shield Committee's reports are regularly published and both show phenomenal growth and expansion, it would seem that some form of local review would be of interest.

It is entirely probable that our patients do not know the amount and kind of insurance coverage that they have purchased. It occurs to us that good medical care of our patients must include obtaining for them the benefits of the one or more prepaid plans that they own. They should expect us to be more familiar with prepaid voluntary medical care programs and policies than they are, in that we have endorsed, recommended, and actually presented a prepaid insurance plan of our own.

How can we estimate the amount of our practice for which our patients can receive compensation from that prepaid voluntary insurance policies? A week's review showed that insurance coverage for office care was to all practical purposes non-existent. Exceptions were the industrial cases and a few of our patients who were covered for laboratory procedures. For the time being it was decided to limit our study to our hospital cases.

A call to a local hospital and the business office of same produced interesting data. Advice was to the effect that of their approximately 1500 admissions per month, 50 per cent had Blue Cross coverage, 30 per cent private insurance, 5 per cent were Arizona State Industrial Cases, one per cent or less were paid by the Federal Government and less than one per cent were hospitalized by social agencies.

From the above you can see that approximately 80 per cent of persons requiring hospitalization were covered by voluntary prepaid insurance programs. Only 13 per cent of hospital admissions completely pay their own bills.

A review of the out-patient clinic or the emergency service of approximately 100 cases per month, shows that 20 to 25 per cent of these cases are State Industrial cases, and that less than 20 per cent are accidents not related to employment and paid in part by Blue Cross. Any estimate of the number of persons who have private insurance was not obtainable because in these cases the office insurance procedure is completed by the private physicians and the patient needs only a receipt for hospital care. The office did not remember any emergency cases coming under Federal or social agency care.

Our friend in the business office of the hospital who furnished this data stated that she remembered just a few years ago when their office had very few prepaid insurance cases. They had many less employees then and no

one employee assigned to "insurance". She stated that four persons now do nothing but complete detailed insurance reports for insurance companies and Blue Cross, and she estimated that 90 per cent of the remainder of the office employee's time was taken up by insurance cases and insurance business. Though the insurance practice in a private office appears small today, if our experience follows that of the hospital, we may look for its increase by leaps and bounds. A study of the national programs shows that there is to be an extension of present coverage of the private programs. The National Blue Cross is recommending expansion and extension of its program and that of its hundreds of affiliates. Medical pay is now a part of the Arizona State Blue Cross and Blue Shield program and contract medicine, some say, is now ever more advanced than other programs in our state.

We must in the immediate future see that our most cooperative patients, those who have taken our advice and arranged to prepay their hospital, surgical, and medical bills, "gets his money's worth".

AMERICAN CANCER SOCIETY, INC., ARIZONA DIVISION, 1429 North 1st Street, Phoenix, Arizona.

A new booklet entitled, "Cancer Detection in the Physician's Office", recently reviewed by the Medical and Scientific staff, and endorsed by the Professional Advisory Committee of the American Cancer Society, will currently be mailed to all practicing Physicians in Arizona through the courtesy of the Arizona Division, American Cancer Society.

Doctors will find this booklet well prepared, written in an interesting fashion and generously illustrated. The Arizona Division hopes it will prove a worthwhile addition to each Doctor's office in their fight against the nation's second greatest killer, CANCER.

WE'VE BEEN PLEDGED

J.A.M.A. Feb. 19, 1955, Page 666, Organization Section:

"The Board of Trustees of the American Medical Association issued a statement commending President Eisenhower for his Jan. 31 health message to Congress and has pledged continued support to improve the health of the nation by strengthening medical efforts at the state and local levels." ***Following is an extract of the statement released by the Board of Trustees on the recommendations of Mr. Eisenhower that are supported in principle by the Board:

"1. An 'intensified attack' on mental illness, which has been termed 'the nation's number one health problem' by the A.M.A. Council on Mental Health.****This project co-sponsored by 16 national organizations, expects to evolve some fundamental departure from traditional concepts of dealing with mental illness which will lead to a far more effective attack on the problem than has thus far been realized".

Statement by Dr. David B. Allman Before Subcommittee of House of Representatives, March 10, 1955, J.A.M.A., April 9, 1955, Page 1315, Organization Section:

Dr. Allman reports on the activities and program of the American Medical Association Committee and the Committees on Mental Health of the State and County Medical Associations. He, as representative of the American Medical Association, outlines a program and calls for the establishment of cooperative relationships of the membership of the American Medical Association with other national groups in the field of mental health.

"In conclusion, I wish to emphasize that the American Medical Association is keenly aware of the seriousness of the mental health problems which exist today and is vitally interested in doing everything within its power to insure that the medical profession makes its maximum contribution in their solution."

THE ARIZONA ASSOCIATION FOR MENTAL HEALTH, Joe M. Young, President, P.O. Box 4664, Tucson, Arizona.

A conference with the office of Dr. Robert S. Barrett, Director of the Maricopa Child Guidance Clinic, shows that on Thursday, March 10, 1955, the Arizona Association for Mental Health which had been described as dormant, stirred; dined and reorganized. The program of the Association for Mental Health is a unique one. Here a private social agency operates through governmental agencies, matching federal funds play an important part in this agency's budget.

The names of those private citizens who have assumed board and committee appointments are most impressive. This speaks well for the success of the present organization as we may anticipate such persons stimulating governmental agencies to increased activity in a search for more federal funds to match local funds.

President Eisenhower's interest is reported as

well as the pledge of the American Medical Association and its component associations.

In Maricopa County at the local level the Maricopa County Medical Auxiliary is the continuing force supporting the Maricopa County Child Guidance Clinic.

An organization of private citizens in Pima County have developed and promoted the Tucson Child Guidance Clinic. Private citizens in Yuma and Nogales are at present in the process of organizing.

From the above we can see that the success of this program has been pledged by medicine, that we have assumed individual and professional responsibility. Here is a newly organized social program of vital importance. Your participation at policy level will be welcomed.



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THE BIBLIOGRAPHY OF EDWARD WILLIAM ADAMSON, M.D.

This column will contain from time to time different episodes in the history of medicine in Arizona, as reflected in the stories of it's hospitals, medical buildings, medical societies, pioneer doctors, etc. It is sponsored by the Committee on Medical History of the Arizona Medical Association. Any contributions to this subject are always welcome. – ED

"Douglas, June 11, 1955 (AP) – Dr. Edward William Adamson, 75, veteran Douglas physician, has been nominated by the Cochise County Medical Society as the outstanding Arizona physician of 1955.

"A practicing physician here for 50 years, Adamson has been superintendent of the County Hospital here since 1924."

– Phoenix Gazette, June 11, 1955.

———————

DR. ADAMSON was born at Cass City, Michian, on September 23rd, 1879. He was the first child and the only son of James Walker Adamson (Scotch), and Emma Mertz (German). On the map of Michigan, Cass City may be found amidst the finest pine ever cut. In 1884 the Adamson family moved to Bay City, Michigan, located along the Saginaw River, a city made prosperous by 36 lumber mills.

At the age of eleven Edward Adamson, like many of the boys of Bay City, went to work during summer vacations in the lumber mills, first as a tally-boy keeping score of the lumber as it was loaded on boats for shipment; next as a tail-carriage man, then scaler behind the trimmers, apprentice in a machine shop, and one summear as chainman on a lumber surveying crew. One summer he was an oiler aboard a lake tug going to Canada for logs.

As both of his parents were musical, Dr. Adamson's musical education began early when he learned to play the cornet and clarinet. His father taught bands. At the age of 16 Edward Adamson was playing the violin publicly in dance orchestras, and occasionally as second violin in the opera house orchestra. He never lost his love for music and after he moved to Douglas he organized and conducted his own orchestra whose members played together for their own amusement for over ten years. Dr. Adamson considers this orchestra as his first "hobby".

At the age of seventeen Edward Adamson graduated from Bay City High School where he had taken a mechanical course, including physics and mathmatics in addition to courses in drawing and shopwork and the required high school curriculum. His father was a teacher of languages, but later became a pharmacist, so he insisted that Edward take four years of Latin, two of Greek, and also German. This knowledge later proved excellent preparation for his studies in medical school.

During the three years following graduation from high school, Edward Adamson worked as a machinist's helper and on a surveying crew, and at nights he worked in a pharmacy. He made the acquaintance of a doctor in Bay City while repairing some of the electrical instruments in his office. Here he was allowed to read some of the doctor's books and familiarize himself with office routine, all of which guided him in the selection of his life's work. Financial arrangements by the doctor enabled the young man to go to medical school and in 1900 he entered the University of Michigan to study medicine.

Because of Adamson's ability as a draftsman and artist, he came to the attention of Professor G. Carl Huber in the department of anatomy, who was then occupied in writing a book on Histology. Adamson made the drawings for this book in his spare hours and on Sundays. Professor Huber always "touched up" the drawings but he nevertheless gave Adamson credit for the art work. The two men became lifelong friends. Sometime later Professor Huber directed his young student in the construction of wax models of the sudoriferous glands of the skin, magnified 700 times, showing the anatomy of the sweat-glands from fetus to adult. These models are still on display at the Medical Museum in Ann Arbor, Mich.

In 1903 Professor Huber described this work in a volume dedicated to Dr. Victor V. Vaughn, Dean of the School of Medicine, and entitled "Contributions to Medical Research". Adamson also did much of the animal surgery for Professor Huber's study of nervous tissue. This same year Dr. Adamson received the honor of

Fellow of Sigma Chi. On his graduation from medical school he secured an internship in the hospital of the Calumet-Hecla Mining Company, Calumet, Michigan. This was considered one of the best assignments available. Here he obtained wide experience in all branches of practice and the opportunity to do the actual work under the immediate supervision of the regular staff members.

On the 29th day of May, 1905, Dr. Adamson arrived in Douglas, Arizona, in answer to a request by Dr. Wright who was then owner and chief of staff of the Calumet Hospital. He wished to go to Paris for a year's post-graduate study and engaged Dr. Adamson as locum tenens. The following year when Dr. Wright returned, Dr. Adamson set up his own private practice and was very successful in every way. In addition to general practice and obstetrics he did a great deal of surgery.

The year 1910 saw the completion of the New Cochise County Hospital and the appointment of Dr. Adamson as Superintendent. He was sent to New York to purchase new equipment for the entire hospital, including everything needed down to the kitchen knives. Dr. Adamson remained as superintendent of the County Hospital for two years, but the hospital was considered a political plum and for the next twelve years 16 different doctors held the position of superintendent until 1924 when the hospital was taken out of politics. Once again Dr. Adamson was asked to accept the position of superintendent and he has retained this position ever since. After much hard work and many disappointments the hospital was built into a really superior institution and compares favorably with any of similar capacity in Arizona.

While taking some post-graduate work in local anesthesia at Chicago in 1924 Dr. Adamson met an Austrian surgeon who was demonstrating spinal anesthesia in this country. He became interested in the technique and upon returning to Douglas he began to use the new method. To date, in about 6000 spinal anesthetics, he has never had any difficulty or untoward result with spinal anesthesia.

When Dr. Wright retired in 1926 he sold the Calumet Hospital to Dr. Adamson who operated it until 1931 when the Calumet and Arizona Mining Company merged with the Phelps Dodge Corporation. Once again Dr. Adamson entered private practice, limited to diagnosis and surgery, in association with Dr. Jack Hild.

In 1913 Dr. Adamson attended a meeting of the Surgeons of North America in Chicago and the following year he was elected a Fellow of the American College of Surgeons.

During the First World War Dr. Adamson was commissioned a Captain in the Medical Corps in 1917 and assigned to duty with the Army Air Force, first at Lake Charles, Louisiana, then Long Island, New York, and finally at Hampton, Va. While in the service Dr. Adamson took 30 hours of flying time, but now he considers himself too old for flying. He was promoted to the rank of Major and in March, 1919, honorably discharged from the Army and returned to his private practice in Douglas.

In social, civic, and fraternal activities Dr. Adamson has been quite active. He has been a member of the BPOE since 1900 (55 year member), and was Exalted Ruler of Douglas Lodge 955 during the year 1923. He became a Mason in 1910 and three years later was elected Master of the Higher Degrees of Masonry, Chapter Royal Arch and a 32nd Degree member in the Scottish Rite. When the Kiwanis Club of Douglas was formed Dr. Adamson was a charter member and its president in 1925. He served on the Board of Directors of the First National Bank of Douglas for six years, until the Valley National Bank acquired the First National. He is a member of the Cochise County Medical Society, the Arizona Medical Association, the American Medical Association, and the Southwestern Medical Society.

From 1912 to 1945 he was Acting Assistant Surgeon U.S. Public Health Service assigned to duty at the Douglas Port examining aliens entering this country from Mexico. For 25 years Dr. Adamson was School Doctor for the Douglas public schools, work which he enjoyed very much, particularly since he helped eradicate the serious eye disease trachoma in this locality.

He has been an ardent out of doors sportsman since his youth; adept at swimming, ice skating, semi-professional hockey, and sail-boating on the Great Lakes. He still enjoys hunting water fowl and upland birds, camping, and he has the reputation of being an excellent camp cook, attested to by all who have eaten his fare.

Among his many hobbies he excels at metal work and carpentry, particularly in the branch of inlaid wood pictures. His workshop repre-

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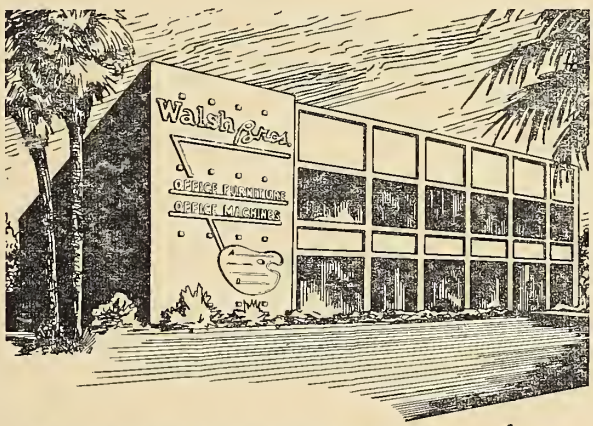
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sents an investment of about $16,000 in fine equipment, and he has several patents which return him sufficient royalty to maintain his shop. He does a great deal of photography, both "still" and "movie", which takes time and money to continue.

He purchased a Ranch-Orchard near Portal, Arizona, in 1932 where he raised apples, registered cattle and polo ponies. He sold his ranch in 1953, considering it a great educational venture but not highly successful as a financial investment.

He was married to Miss Florence Dillingham of Boston, Mass., in 1906. She died in 1924. Two years later he re-married, his second wife being Miss Anna Van Brunt Foster of New York City. She passed away in 1944, at Douglas. Dr. Adamson has no children.

Dr. Adamson believes his life has been a great adventure which has yielded many things, both happy and disturbing, many sincere friends and grateful patients, for which he is duly thankful.

Arthur E. Engelder, M.D.
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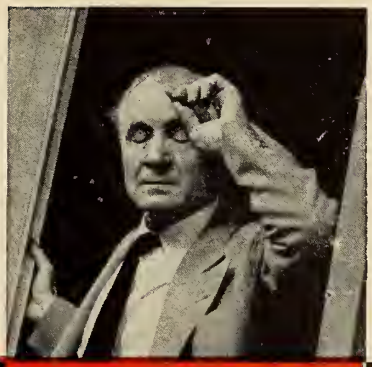
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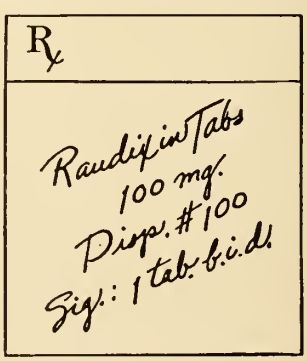
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Enriched White Bread (toasted)	50	4.2	130
Sugar	10	0.7	40
Butter	10	0.1	73
Whole Milk	480	16.9	330
Calories 750		Fat (gm.).....	28
Protein (gm.)..... 25		Carbohydrate	100

*Literature available upon request. Address Nutritional Research Dept., Albers Milling Co., A Division of Carnation Co., 5045 Wilshire Blvd., Los Angeles 36, Calif.

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1. Toverud, K.U.; Stearns, G., and Macy, I.G.: Maternal Nutrition and Child Health, an Interpretative Review, Washington, D.C., National Research Council, Bull. 123, 1950.

2. McLester, J.S., and Darby, W.J.: Nutrition and Diet in Health and Disease, ed. 6, Philadelphia, W.B. Saunders Company, 1952, p. 241.

3. Marrack, J.R.: Food and Planning, London, Victor Gollancz, Ltd., 1943, p. 67.

4. Wolgamot, I.H., and Fincher, L.J.: Pork Facts for Consumer Education, Washington, D.C., United States Department of Agriculture, AIB No. 109, 1954.

5. Watt, B.K., and Merrill, A.L.: Composition of Foods—Raw, Processed, Prepared, Washington, D.C., United States Department of Agriculture, Agricultural Handbook No. 8, 1950.

6. Bowes, A. deP., and Church, C.F.: Food Values of Portions Commonly Used, ed. 7, Philadelphia, Anna dePlanter Bowes, 1951.

Percentages of Recommended Daily Dietary Allowances* for Pregnant (3rd Trimester) and Lactating Women Provided by 3-Ounce Portions of Cooked Pork Meats and Pork Sausage

	Protein	Iron	Phosphorus	Thiamine	Riboflavin	Niacin	Calories
PREGNANCY (3rd trimester)							
Ham, without bone, 3 oz., cooked[5]	25.0%	17.3%	13.5%	30.0%	10.0%	26.7%	12.5%
Pork Chops, without bone, 3 oz., cooked[5]	25.0%	17.3%	13.3%	47.3%	10.0%	28.7%	10.5%
Pork Sausage, 3 oz., cooked[6]	17.3%	14.0%	9.2%	27.7%	10.1%	18.5%	14.7%
LACTATION							
Ham, without bone, 3 oz., cooked[5]	20.0%	17.3%	10.1%	30.0%	8.0%	26.7%	10.2%
Pork Chops, without bone, 3 oz., cooked[5]	20.0%	17.3%	10.0%	47.3%	8.0%	28.7%	8.6%
Pork Sausage, 3 oz., cooked[6]	13.8%	14.0%	6.9%	27.7%	8.1%	18.5%	12.0%

*Recommended Dietary Allowances, Washington, D. C., National Academy of Sciences—National Research Council, Publication 302, 1953

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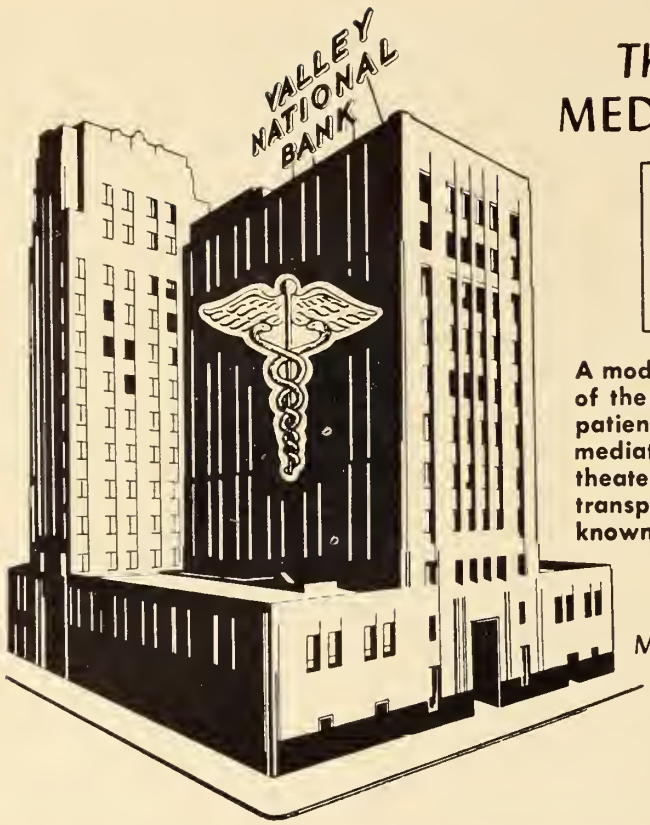
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1. Rosenberg, S. and Oster, K. A., "Gelatine in the Treatment of Brittle Nails," *Conn. State Med. J.* **19**:171-179, March 1955.
2. Tyson, T. L., *J. Invest. Dermat.* **14**:323, May 1950.

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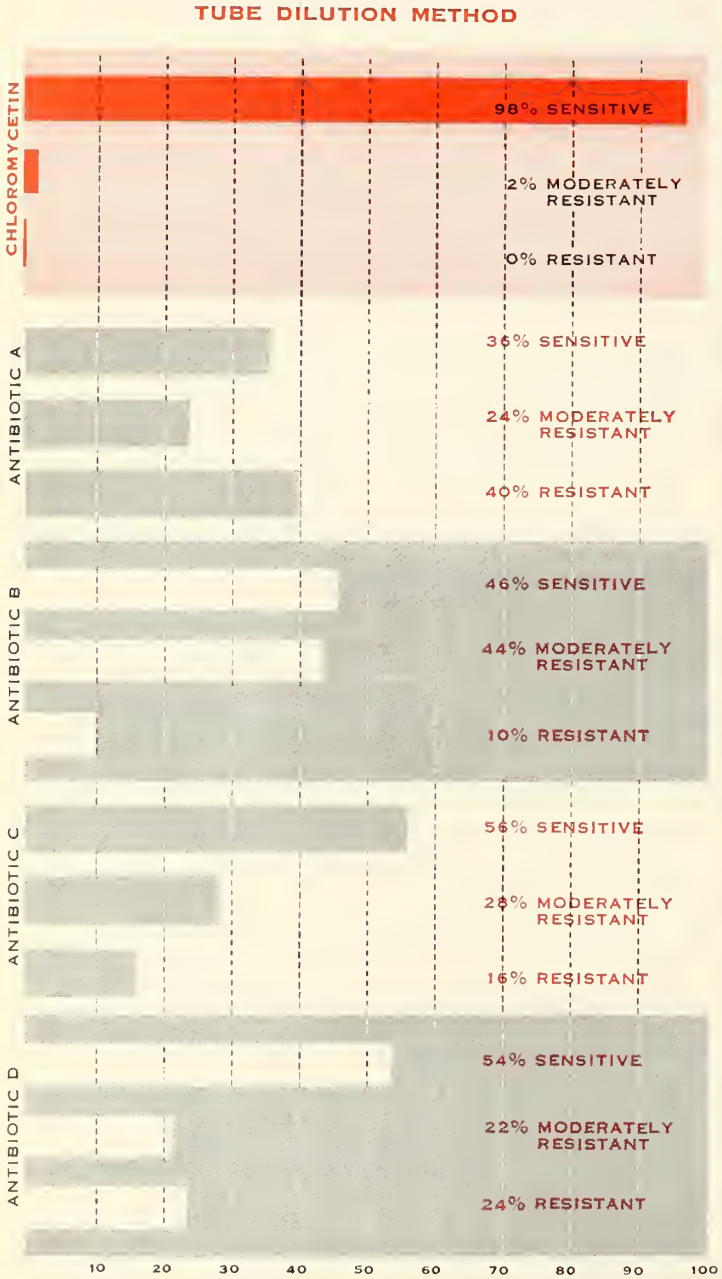
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ARIZONA MEDICINE
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Original ARTICLES

MEDICAL THERAPY FOR SUPERFICIAL PHLEBITIS, PHLEBOTHROMBOSIS AND THROMBOPHLEBITIS

Wallace Marshall, M.D.
Two Rivers, Wisconsin

PHLEBITIS is inflammation in a vein (1). If there is a thrombus in that vein it is called thrombophlebitis which can be caused by three major factors. Moseley(2) mentions: (a) increased coagulability of blood which might follow trauma or be caused by anemia or polycythemia, (b) the slowing of venous blood which may be caused by heart disease, dehydration or prolonged immobility and (c) damage to the vein intima through trauma or infection. Of all these causes, perhaps trauma and the resulting damage to the intima are the most important.

Ochsner and De Bakey, in 1939, first used the term of phlebothrombosis and distinguished it from thrombophlebitis. The thrombus in the latter condition is attached firmly to the vessel wall. Phlebothrombosis occurs often in postoperative cases, and its thrombus is detached easily from the intimal wall of the vein(3). However, phlebitis, phlebothrombosis and thrombophlebitis are probably various stages of the same basic pathological disorder, which is dependent, in many cases, upon trauma. The trigger mechanism which leads to thrombus formation is damage to the intimal wall which initiates a reaction perhaps releasing a thrombokinase, and the resultant thrombus formation begins. The presence of thrombus formation is not too serious so far as the possibility of death is concerned. However, if a piece of the thrombus becomes dislodged and enters the larger vessels, the chance of death becomes greater.

Lowenberg(4), in writing about recent treatments for phlebothrombosis, stated that: "Despite all these advances, the overall incidence of pulmonary embolism has not appreciably changed in the past two decades, even with the use of anti-coagulants and vein interruption procedures; some statistics even show an increase in the incidence. During this era, early ambulation has become routine, and close scrutiny by the house officers for signs of thrombosis has become a habit." Lowenberg describes a sphygmomanometer cuff pain test to assist in the early diagnosis of thrombus formation.

There has been a general trend to use anticoagulant drugs in recent years. Kim(5) wrote that "Studies of the beneficial effects of anticoagulant drugs in the treatment of thromboembolic diseases have stimulated a search for an ideal agent. Such a drug should be non-toxic, possess rapid onset of therapeutic effect and a shorter duration of action, require a constant maintenance dosage, and result in a prompt recovery after discontinuation of the drug. No one anti-coagulant to date meets these ideal criteria."

In pondering over the above exacting therapeutic criteria, it occurred to the author that a most important old dictum should be included in the matter of discussing the non-toxic property of such a drug. One could include that such an agent should not jeopardize the well-being of the patient. In other words, the drug should not create a situation which could well produce death from hemorrhage in case of severe and sudden injury. Such might be the case with patients who are under the influence of

heparin and dicoumarol. If such an unfortunate episode were to happen, the treatment would be certainly worse than the disease. I am reminded of the warning which has been given to most medical neophytes. If one can't help the patient, be at least not guilty of harming him. And this brings us to a consideration of the rationale of therapy which should be aimed at the existing thrombus. Moseley(6) has written aptly that "anti-coagulant drugs will not dissolve an existing thrombus, but, if correctly used, should prevents its extension." This same author goes on to write that "the ideals in the treatment of leg thrombophlebitis are two-fold, namely, to terminate the disease process as quickly as possible, and also to lessen or eliminate the late sequelae of this disease."

The signs of the presence of thrombotic disease are the same as those which accompany inflammation. There are the well-known dolor, calor, tumor, rubor and functio laesa, for the formation of a thrombus produces inflammation, which can be treated as any other type of inflammation which may occur elsewhere in the body. But it is the sudden death which makes every clinician wary of thrombus formation. For sudden increases in intra-abdominal pressure and consequently intravenous pressure may cause sudden death due to the detachment of a portion of the tail of the thrombus. This calamity is apt to occur post-operatively when the patient gets out of bed for the first time or when he exerts himself in order to use a bedpan.

It does not appear to be good therapy in treating thrombus formation and its very serious sequelae if preventive therapy could have been instituted beforehand. It is useless to lock the barn after the horse has been stolen. Hence, the prevention of thrombus formation should be of paramount importance in the discussion of this topic.

The role of trauma and damage to the intima of blood vessels has been stressed heretofore for very good reasons. Few if any blood clots form in healthy, normal blood vessels whose intima are intact.

During a conference on blood clotting(7) Doctor I. S. Wright inquired: "Does anyone here have had experiences regarding the combined use of Vitamins C and P with dicoumarol therapy?" Doctor Karl Paul Link answered: "I will say that, personally, I will not allow any clinician to give me dicoumarol until I have the chance to take Vitamin C, even at Mayo's. That is where my faith comes in, faith in the results with experimental animals that Vitamin C plays a definite role." And with this introduction to the role of Vitamins C and P and related substances for the treatment of thrombotic phenomena and their prevention, we shall examine some aspects of this interesting therapeutic approach.

Ascorbic acid (cevitamic acid or Vitamin C) is a most important factor in wound healing as well as being vital for several oxidase enzyme systems. It is very essential for the integrity of certain cells of mesenchymal origin. Such tissues as intracellular substance and particularly the capillary bed and the collagen of fibrous tissue need Vitamin C for both their production and maintenance(8). Its deficiency causes poor or inadequate wound healing and reduces the tensile strength of wounds(9), 10). Hence, Vitamin C deficiency may well lead to wound disruption and delay in wound healing. But most important of all, the deficiency of ascorbic acid can cause hemorrhage into the wound space and consequently the formation of excessive scar tissue(9). If blood is left in situ in a wound there is more than a possibility that an overproduction of fibrous (scar) tissue may ensue(11).

As for the role vitamin P plays in the body economy, Szent-Gyorgyi(12) found that Hungarian paprika and lemon juice contain a substance "citrin", other than ascorbic acid, which controls hemorrhage in various conditions. This substance on analysis(13) was found to consist of two related flavone glucosides, Hesperidin and Eridictyol, with Hesperidin being the active substance.

In cases of increased capillary vulnerability, many investigators (14, 15, 16, 17, 18, 19, 20, 21) were able to reverse the process to normal with this substance. A somewhat similar substance, rutin, has been prepared from tobacco and, more economically, from buckwheat(22). The chemical forulas of hesperidin and rutin are noted as being quite similar.

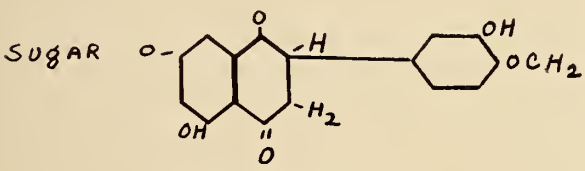
These chemical substances are related to Vitamin P(23). Wawra and Webb(24) isolated a compound from lemon called hesperidin chalcone which they thought might be Vitamin P. The former substance (hesperidin chalcone) is an active oxidation-reduction agent.

Thienes(25) recorded that: "because of the

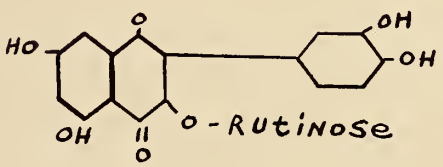
current opinion that vitamin deficiences are usually multiple and because of the difficulty of diagnosing threshold deficiences, it is becoming common practice to prescribe the associated substances of Vitamin P, namely hesperidin and rutin, along with Vitamin C. There seems to be a definite synergistic effect when this practice is followed".

According to Lindheimer et al(26) a review of the literature shows that: "a synergism of Vitamins C and P is suggested by some studies, whereas others indicate that Vitamin P acts by itself." The first clinical evidence of such an existing synergism between Hesperidin and ascorbic acid was reported by Warter and his associates(27, 28).

The clinical effect of the Vitamin P flavone glucosides, hesperidin and rutin, seems to demonstrate a therapeutic effect upon cases showing increased capillary fragility. Bacharach and Scarborough(29) reported that their experiments indicated that the activity of rutin may indeed be only about one half that of hesperidin.



HESPERIDIN

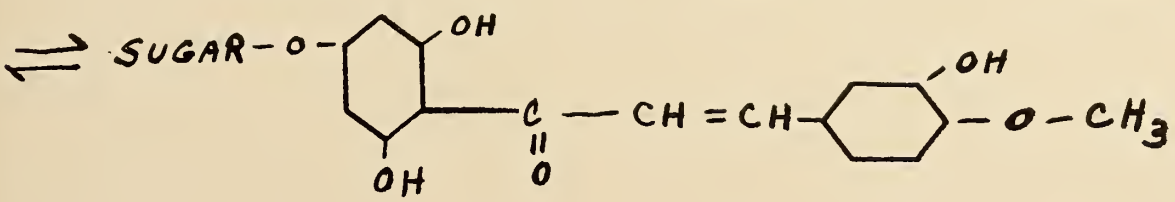


RUTIN

These Vitamin P derivatives may correct increased capillary fragility and increased cell permeability by inhibiting hyaluronidase, as Martin has recorded(30). Ascorbic acid seems to have this same property, according to Woolley and Krampitz(31), for it inhibited hemorrhages in various parts of the body of cotton rats and mice. Lichtman(32) reported the ascites in 10 patients with carcinoma showed some improvement with the use of Hesperidin-C. This improvement was probably due to reduction in capillary permeability and fragility through the inhibition of hyaluronidase, as Beiler and Martin(33) have reported with the combination of Vitamin C and the Vitamin P substances.

Martin(34) summed up the role of the capillary system when he wrote: "Across the walls of the capillary must pass all life-giving ingredients found in the blood whether of gaseous, ionic or molecular magnitudes. Life depends upon the integrity of the capillary tree . . . its dynamic functional qualities, and the significance of the intercellular substance, one is caused to marvel at the importance to the body of proper control of this 'cement of life'. . . . Such control is exerted by ascorbic acid and by the flavonoids. The anatomical and physiological importance of the capillary is directly correlated with the biochemical basis of action of the bioflavonoids and in turn with that of ascorbic acid. These factors then form the background for the clinical application of the ascorbic acid and hesperidin combinations."

The above paragraph can very well apply to the entire vascular system, for through its portals pass all the "life-giving ingredients". And if these precious substances leave their containers, because of increased capillary permeability (diapedesis) or because of frank rhexis,



HESPERIDIN CHALCONE

some disease processes are in operation, and early therapeutic intervention becomes mandatory.

Blood clotting is Nature's method to stop hemorrhage. This amazing process is set into motion by one of Nature's methods of reacting to injury (trauma). Damage to the intimal layer of blood vessels sets the process into motion through the production of thrombokinase. Needham(35) aptly described blood-clotting in these words: "Blood-clotting is necessary to prevent excessive bleeding as well as to close and protect the wound, and has been evolved independently in different groups of animals. It demands very necessary safeguards against clotting in the circulatory system itself. In the vertebrates, bleeding is reduced also by the constriction of the local blood capillaries and arterioles, a phenomenon often strikingly shown by deep wounds. . . . Persistant starvation of blood is fatal to the tissues and the local pallor is temporary. At the very edge of the wound the vessels remain dilated, forming the familiar red tache; so evident after a light scratch. The functional significance of this is not clear; it may be part of the defense-reaction, or perhaps plugs of clotted blood in these vessels help to anchor the main clot."

Phlebothrombosis and thrombophlebitis are produced by the clot formation which results from fracture of the endothelial lining. It is the result of trauma, bacteriologic, chemical or physical in nature. The older clinical method for treating these disorders was to elevate the affected part and to apply hot compresses. Some clinicians applied the time-honored Unna boot or compressed the part with elastic bandages. The treatment was to combat (1) embolism, (2) progressive thrombosis, and (3) persistent edema. To treat the latter complication, small daily doses of X-ray therapy were employed. The tying-off of the large veins was done to prevent a possible embolus from producing possible death. Or the thrombus itself was removed, if possible, by surgical means.

Then came the Messiah in the form of the anticoagulant drugs to combat this phlebitic condition. The two drugs employed are heparin and dicoumarol.

The author has wondered why these drugs have been employed when a thrombus is already in existence. The answer given was the likelihood of a portion of the tail of the thrombus becoming detached to form an embolus. But the question still remains. Do these anti-coagulant drugs dissolve an already formed thrombus after it has become detached?

We shall leave our consideration of the theory behind the use of the anti-coagulants. There have been several disadvantages to the use of heparin. The reader may agree that this material is quite costly to the patient. Heparin must be administered by continuous intravenous infusion for the best clinical results. And it is very necessary to obtain determinations of the coagulation time. In the case of progressive thrombophlebitis, the coagulation time should be determined every 4 hours for the first two days, then every 8 hours for a day or so, then every 12 hours. If this drug is administered immediately after surgery, the coagulation time should be determined about every hour for the first 24 hours, for there may be a considerable tendency toward bleeding if the coagulation time is prolonged greatly. And lastly, there is always some degree of danger from hemorrhage when patients are treated with heparin. But this is minimal if the proper precautions are used. One can add that a strong hospitalization policy is a "must" if the patient is not too sound financially, if heparin is employed.

What are the contraindications for dicoumarol? These are the deficiencies of Vitamins C or K, severe liver disease particularly with prothrombin deficiency, blood dyscrasias characterized by impairment of normal mechanisms which prevent hemorrhage and purpura; because dicoumarol may cause or even increase bleeding in these conditions. Dicoumarol is contraindicated in cases of renal insufficiency because the effect of this drug is enhanced and prolonged. This medication should be avoided in patients who have had recent operations on the brain or spinal cord, because hemorrhage in these areas might be disastrous. It should not be used in cases with subacute bacterial endocarditis because of the increased danger from hemorrhage which is inherent to this condition. Avoid the use of dicoumarol when vomiting from gastric or intestinal obstruction is present. Avoid its use in cases with ulcerative lesions and open wounds or surfaces, because dicoumarol may provoke hemorrhage when such conditions are present.

Rationale for Use of Hesperidin and Vitamin C

The promiscuous use of toxic and dangerous

drugs should not be advocated unless these agents are used by expert clinicians in properly controlled situations where adequate laboratory and nursing staffs are available continually. Such does not appear to be the case in smaller hospitals. The author is not a seer. He does not know whether or not an ambulatory patient will be knocked to the curb by a speeding car after he has taken an anti-coagulant drug. Nor does he perform gastroscopies on each and every hospital patient who may very well happen to have a symptom-free esophageal, gastric or duodenal ulcer.

Rather, the better procedure would be to use a non-toxic and quite harmless preparation which has no known contraindications. Realizing that the entire vascular system is subject to thrombus formation during or following surgery, it has been my custom to administer a proper amount of Vitamin P glucoside with Vitamin C pre-operatively. This procedure is used for several reasons. As mentioned, it avoids the formation of a thrombus by conditioning the endothelial lining (ground substance). This prevents the formation of edema which may be caused by the process of diapedesis of fluid which may leave the vascular tree and enter the adjacent tissue. If insipissated and in a large amount, this fluid (either blood serum or blood itself) can produce the excessive formation of fibrous tissue(36).

The usual dosage of Hesperidin-C* (therapeutic) is three tablets 4 times daily. The maintenance dosage is one to three tablets twice daily. Recently a more concentrated dosage has been made available. This product is Hesper-C**, and is made in an attractive capsule form.

Since most all types of vascular thrombi exhibit the 5 cardinal signs of inflammation (Galen), the therapeutic approach should be directed to the treatment of the involved injured intima. This is corrected through the use of the above medications (Hesperidin-C or Hesper-C).

The use of hyaluronidase locally is contraindicated because of the bio-antagonism which exists between this drug and Hesperidin. One can use Parenzyme***, which is relatively non-toxic to reduce edema. Recently the author has used another wholly non-toxic preparation Kutapressin**** which can be injected in an uninvolved area either subcutaneously or intramuscularly to reduce edema of the involved area through its power of selective vasoconstriction. It has been employed by the author to reduce edema also in such severe disorders as angioneurotic edema and atopic dermatoses(37).

Therapeutic Results

As was stated heretofore, only non-toxic therapeutic agents have been employed by the author to treat cases of superficial phlebitis, phlebothrombosis and thrombophlebitis. This was accomplished by **preventing** the intima of the circulatory vessels from becoming damaged extensively by disease or trauma. When the certain form of thrombus formation was diagnosed, each patient was treated energetically with a form of Hesperidin and Vitamin C. If a serious amount of edema was present, it was reduced with Kutapressin or Parenzyme. When thrombi were discovered and treated, it appeared that they became attached securely to the intima, and further thrombus formation did not occur. Hence, the formation of emboli was not encountered. The next highest incidence of thrombi was found in cases who had been subjected to some form of pelvic surgery. However, after adequate therapeutic doses of Hesperidin-C had been administered, the presence of the thrombi did not preclude our routine procedure of early ambulation. Pain produced by thrombus formation usually disappeared after the first day of treatment. The other concomitant signs of inflammation also disappeared shortly thereafter.

Over a dozen physicians, who have followed the above procedures, have confirmed similar results in their own patients.

The author does not intend to convey the impression that this is the ultimate or final therapeutic procedure in the presence of thrombotic phenomena. Rather, this report is tendered to serve as a guide to a somewhat different approach to this perplexing therapeutic problem. The method is certainly reasonable from the financial aspect. Furthermore, the medications employed are non-toxic, and to the author's

* Hesperidin-C is manufactured by the National Drug Company of Philadelphia. Each tablet contains concentr ted Hesperidin 50 mg. and a similar amount of ascorbic acid (1000 units).

** Hesper-C is manufactured by this same company. It contains exactly twice the amount of hesperidin and vitamin C found in the above product. The recommended adult dosage is two capsules 4 times daily for one week, then one four times daily.

*** Parenzyme is an injectable preparation of pure crystalline Trypsin in sesame oil manufactured by the National Drug Company of Philadelphia.

**** Kutapressin manufactured by the Kremers-Urban Company of Milwaukee.

current knowledge, there are no contraindications to these quite simple procedures.

Summary

The use of the Vitamin P substances are described for the adequate treatment of superficial phlebitis, phlebothrombosis and thrombophlebitis. This therapy has produced adequate results in combatting the results of trauma and disease on the injured vascular intima. Early ambulation of cases, under this therapeutic regime, have resulted in the elimination of the signs of inflammation. No fatalities have occurred. This therapy is within financial scope of all patients. The results, culled from this study, appear to merit further consideration from my colleagues.

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RESECTION FOR PULMONARY DISEASES

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RESECTIONAL surgery of the lungs has become a fabulous procedure, with a huge scope, and with amazing results. . . . It has been a practiced procedure for only 20 years. It has been used freely only in the 10 years since the end of World War II. It has been used most safely for only the past five years.

The title of this report should be modified to read — 'Resection for Pulmonary Diseases . . . **from the Viewpoint of an Internist**' . . . I have consorted with surgeons, but am not a Philistine. This possibly stems from having a professor who insisted that his internes see at least one major chest operation, so that they would be impressed by it, but no more than one so that they wouldn't become too tolerant.

The increased use of pulmonary resection has resulted from a fortunate coincidence with a series of adjunct methods. They include a **half dozen safeguards, a great advance in diagnostic procedures, and a growing total of results,** which can be used for analyses.

1. The **safeguards** have grown with the daring pioneer surgery of Graham, Alexander, Rienhoff, Overholt, Gale, Jones, Ochsner, and their colleagues and pupils. They have not sprung full-blown, but have come, literally, thru "sweat, blood and tears". . . . There has been help from the greater knowledge of anatomy and physiology of the lung. . . . Information on indications for resection has made excision safer. . . . The patients have been better prepared by hydration, in vitamin content, for coagulation, and to withstand infection. . . . The progressive induction of anaesthesia, using narcotics, barbiturates, and a gas high in oxygen content, plus the use of controlled intratracheal administration, have smoothed the way and reduced the hazards enormously. . . . Prevention has been the attitude towards shock, rather than treatment after it appears. The blood-bank program has been a wonderful aid. . . . The availability of sulfa drugs, and then a dozen antibiotics to prevent wound infection and empyemas has cut the best previous statistics from 5% to almost zero. . . . The tuberculous cases can be made relatively inactive by specific chemotherapy, and the hazard of bronchogenic spread and empyema in drug-sensitive cases is very scanty. . . . Such added technics as tube drainage, bronchial aspiration, early mobilization of the patient, etc., have improved operative efficiency and results.

2. **Diagnostic methods** are aimed at identifying and localizing the lesions. . . . The size of the resection may be a pneumonectomy, a lobectomy, a segmental resection, a wedge resection, or a 'pinch'. Combinations may include the upper and middle lobe on the right, a lobe and a segment, two segments in one or two lobes, and a segment and wedge. Bilateral resections are not infrequent, but not at the same operation.

The lobar and segmental **anatomy** of the lungs is fairly well agreed to be that described by Jackson and Huber, allowing for the occasional variations and incompleteness of nature. (See lung model). The upper lobe on the right has three segments, the middle lobe has two, and the lower has five. The upper and lower lobes on the left each has four segments (tho some surgeons believe that the apical-posterior segment of the upper lobe should be subdivided). There is no major bronchial or vascular communication between these segments in the normal lung.

A **decision on diagnosis**, and possible resection, should be preceded by certain examinations. Most of them will not be necessary in the usual case, but the lesion may be atypical or obscure, and there may occasionally be two or even three entities present. It may defy the 'medical detective' efforts of the best clinician and his laboratory, and may require resection for diagnosis. Sometimes even the omniscient pathologist is stumped. . . . The social, family, occupational, and symptomatic history is often helpful. . . . The chest and general physical examination may help define bronchial status and lung function. . . . The x-rays may include stereo, grid, lateral, oblique, and lordotic films; all previous films; films taken with a contrast medium in the bronchi; and some form of stratigrams or body section films (planigram, tomogram, or laminagram) . . . Angiocardiography is said to be helpful on rare occasions. . . . Bacterial exams of the secretions may require many

° Reported to the Arizona Chapter, American College of Chest Physicians, Saturday, May 7, 1955, 10:00 A.M.

sputum concentrates, cultures, or guinea pigs; and gastric concentrates, cultures, or pigs. Sputa can be examined by special stains (for fungi) and for cell types. . . . The bronchial secretions may be obtained by tracheal lavage (which I don't like), or bronchoscopy. The bronchoscopic exam can locate the source of secretion or blood; obtain cells for study; and take a biopsy. . . . Tissue may also be obtained by thoracotomy, needle puncture, and by the scalene or newer para-tracheal node biopsy. . . . Blood counts and sedimentation rates give occasional but indefinite help. . . . Pulmonary volumina and function studies are often useful, and may usually be simple. In some cases a bronchospirometry may be of great help.

3. **Indications and results** of resection can be considered together. It is almost useless to scan the literature of more than 3 or 4 years ago, since progress has made a great deal of the data obsolete. There are dozens of conditions for which resection may be indicated, but cancer, tuberculosis, and localized infections are the most common. The list of indications can be divided into **lymphogenous, vascular, degenerative, non-tuberculous inflammations, TB, neoplasms,** and **undifferentiated densities.**

Age is a somewhat modifying factor for resection. One does not choose the very young or very old as ideal candidates, but critically needed surgery is done in spite of increased risks. It takes a special type of judgement and fortitude to balance the risks against the gains, and then proceed. . . . It has been said that the resectable lesions of **infancy** include large congenital cysts, bronchiectasis, occasional lung abscesses, rare TB, and the lung complications of cystic fibrosis of the pancreas. . . . The lesions in persons above 60 which most often demand consideration are carcinomas, destructive and infectious TB, fungus diseases, and suppurative lesions of the lungs and bronchi.

Primary lesions of the **pulmonary lymphatics** do not form an indication for resection. Silicosis is not resectable, but isolated areas of silico-tuberculosis have recently been removed with success. Nodes adjacent to the lung have been removed along with the lesion they produce in "middle lobe syndrome", but removal of Hodgkin's nodes is not now accepted as of value.

Lesions of the **blood vessels** are resectable only in the case of arterio-venous fistula which produces a serious shunt, or when a Rasmussen's aneurysm fills a cavity and adds the hazard of hemorrhage.

Degenerative lung lesions may include bullae and the controversial hypertrophic emphysema with 'vanishing' lung. Bullous areas can be resected, whether obstructed, or infected, or not. Crenshaw resects the areas of useless 'air-robbing' lung, which he says are due to arterial obliteration. He also does an autonomic denervation and a symphysis with the chest wall.

Bronchial inflammations are most eligible for resection. **Bronchiectasis** has been successfully removed up to a total of more than two lobes. Careful lung-mapping should be done to define the involvement, and the new aqueous or oily Dionosyl is not only rarely toxic but clears far faster and more completely than iodized oil. . . . **Congenital cysts** should be excised, saving as much lung as possible, even if not infected, due to their tendency to become malignant.

There are several **non-tuberculous lung** lesions which are frequently resected. Cavities of unknown origin are usually removed. Suppurative pneumonitis from foreign bodies should be resected. Areas of "cholesterol' pneumonia are useless, and should also be removed because of a resemblance to neoplasm. Fibro-caseo-cavitative mycotic lesions had best be resected, including coccidioidomycosis, histoplasmosis, blastomycosis, and other less common fungus infections. Cotton has reported a series of 24 resected lesions in which 'cox' was complicated by TB. . . . Lung abcess was once a most frequent indication for resection. Antibiotics made operation possible, but now have largely eliminated the need. It has been said that surgery may become unnecessary, but I think there will always be residual and late diagnosed and putrid lesions to resect.

This may be a good spot to mention '**solitary**' **lesions** of the lungs. They are largely the product of survey films, and usually are asypmtomatic. The most common cause is one of a dozen kinds of granulomata, but it can be anything from TB, residuals of infarction or pneumonitis, vascular lesions, up to benign or malignant tumors. . . . The first implication of a solitary lesion is that neoplasm must be ruled out. Many diagnostic methods may be required to do so, tho a bacterial positive may be a quick help. Central calcification, perhaps shown by stratigrams, is hopeful but not completely certain evidence

against neoplasm, and about ten types of lesion may contain calcium. . . . Actually from 20 to 55 per cent of solitary lesions have been found to be malignant, depending on the series, and 50 to 75 per cent of solitary lesions are eligible for resection.

This leads us to mention **solitary metastases,** which have increasingly been excised if the primary has been removed and there are no other known metastases, or if the primary can't be found. The prognosis must be guarded, but enough 2 to 5 year cures have resulted to make it worth while. (The sources for metastasis are the colon, fibro-sarcoma, hypernephrois, and ovary in that order. The metastases from the lung may go to nodes, liver, pleura, and elsewhere in the lungs. A six-year cure of metastasis from lung to lung has been reported).

Primary carcinoma of the lung is fairly often a resectable lesion; it should be more often. Eighty per cent can be diagnosed pre-op., with x-ray leading at 75%, bronchoscopy at 33%, and cytology of bronchial secretions positive in a high 65%. About half of the average cases are operable, and about two-thirds are resectable, tho the number of the resected alive at 5 years is only about 15 per cent. . . . The delay before diagnosis is 8 months or more, and salvage of small lesions is far greater than of the advanced. . . . Ochsner insists that CA of the lung has increased 25 times in men, and 10 times in women in the past thirty years; that the ratio of males to females is more than 6 to 1; that cigarette smoking is closely correlated with the occurrence of bronchogenic CA, and that a man over 50 who has been a heavy smoker for years has 50 times the chance of such a lesion as a non-smoker of the same age. . . . The best recent news about resection for CA is from Jones, Robinson, and Meyer. They believe that lobectomy is legitimate and indicated for silent peripheral carcinomas. Their operative mortality has been reduced from 6% after pneumonectomy to zero after lobectomy, and the 5-year survival has been increased from **16 to 60 per cent.** This is partly due to the better risks in the lobectomy group, but, it argues strongly for repeated routine x-rays of men over 40.

Resection for tuberculosis is now the method of choice. One might think (because we are used to miracles) that the indications would be 'set', and the complications infrequent, but they are not. . . . The indications are partly uncertain, due to the chance of definite healing with chemotherapy alone, especially in non-cavitative lesions, and the uncertainty of how the drugs affect the bacillus. . . . Complications must be lessened, since they still amount to about 10% when even a small volume of lung is removed.

. . . Kieran of Oakland stresses the resilience of lung tissue when he tells what happens to the lung at resection — "The patient comes back from surgery with that beat-up hunk of tissue; it has to live; we expect him to breathe with it — and he does!" . . . On the contrary, many of us knew the late Dr. John Alexander of Ann Arbor and Tucson, and we must seriously consider his cautions concerning the indications for excision, — collapse works well; drug effect is improving; the mortality of resection is low, but the morbidity is not good. . . . The **absolute indications for** resection of TB now include large solid 'tuberculomatous' lesions, a destroyed lobe or lung, scarred bronchial stenosis, and chronically infectious localized lesions. The **possible** indications apply chiefly to segmental resections, and include fibrocaseous lesions (with or without cavitation), several types of cavitation (blocked, tensions, thick-walled, in middle & lower lobe), atelectasis, bronchiectasis, small tuberculomas, and diagnostic problems. . . . O'Brien says "there is chaos concerning removal of the small residual TB lesion." Medlar's thesis that they should be removed was sound when made, but the drugs seem (repeat, seem) to be working better. The relapse rate of residual nodules before chemothrapy was more than 30%; now it is 2 to 5% with chemotherapy, with or without resection. . . . The largest series of resections (1150 cases) is that of Gale and colleagues in Wisconsin. The mortality for 250 quite ill pneumonectomies was 7.24%; for 440 lobectomies was 2.28%; and for 365 segmentals was 0.27 (or 1 death). There were no deaths in 70 bilateral resections. There were 7.5% of complications with recovery. Their use of segmentals is increasing, so their total mortality is lowering. . . . The statistics of other surgeons are about the same, tho the segmental mortality rate is not as low. . . . The problem of 'space-filling' to reduce over-distention has been attempted by Gale, who has used 'Ivalon' sponge after pneumonectomy, and Cotton, et al., and Woods, et al., who have used lucite spheres as a prosthesis in an extraplural space after lobectomy. Their mortality is low and decreasing, and the

complications are less common.

This summary has only scanned a portion of the recent work on resection. We are all ready and eager to hear of bona fide progress, but we must be alert to prevent a 'lag-period' before we hear and use it, and cautious to be sure that it is sound.

PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE

FIRST admission. A seventy-six year-old man entered the hospital because of chest pain.

The patient had noted mild shortness of breath on exertion for a month before admission. The afternoon prior to admission he suddenly developed a tight feeling across the midsternal region that was accompanied by palpitation and last twenty minutes. There were two recurrences of this feeling, each lasting twenty minutes, one after the evening meal and the second early on the morning of admission. There was no radiation of this distress upwards or into the arm, and it was not accompanied by sweating or dizziness. There was no history of epigastric distress, orthopnea, ankle edema, past episodes of chest pain or urinary disturbance and no past illnesses of significance.

Physical examination revealed a well developed, well preserved man in no acute distress. The lungs were clear. The heart was not enlarged. There was a Grade I aortic systolic and Grade II apical systolic murmur. The aortic second sound was louder than the pulmonic. The abdomen was negative. There was no peripheral edema.

The temperature was 98.3°F., the pulse 72 and the respirations 20. The blood pressure was 145 systolic, 80 diastolic.

Examination of the blood showed a hemoglobin of 15.5 gm. and a white-cell count of 6900; the sedimentation rate was normal. The nonprotein nitrogen was 32 mg. per 100 cc. A urine, of specific gravity 1.020, was normal. Roentgenogram of the chest demonstrated a normal-sized heart, a moderately tortuous aorta and emphysema of the lungs with linear strands of density in the right and left upper lobes. An electrocardiogram revealed a normal rhythm at rate of 65, a PR interval of 0.16 second, a QRS interval of 0.07 second and a normal axis; the T waves were upright in Leads 1, 2 AVF, AVL and V_1; low upright in Leads 3, V_5 and V_6; diphasic in Leads V_2 and V_3; and inverted in Lead V_4. There was a normal progression of R and S waves in the precordial leads.

In the hospital the patient had an occasional attack of "choking with trouble breathing" but without pain, lasting about one-half hour; the last attack was promptly relieved by nitroglycerine. Repeated electrocardiograms showed no changes of diagnostic significance from the first one. He felt generally well and was discharged on the eleventh day.

Final Admission (thirteen days later). In the interval he did fairly well on restricted activity. He had no chest pain or shortness of breath. On the day of admission he experienced severe substernal pain accompanied by an uncomfortable sensation down the inner aspect of the left arm. The pain was choking and crampy in character, not related to exertion and not relieved by nitroglycerine, it gradually subsided at the end of an hour, although an uncomfortable sensation persisted in the chest for several hours.

Physical examination was unchanged from the previous admission.

The temperature was 98 F., the pulse 72 and the respirations 20. The blood pressure was 140 systolic, 80 diastolic.

Urinalysis was negative. Examination of the blood showed a hemoglobin of 13.8 gm. and a white-cell count of 7950, with a normal differential. The serum nonprotein nitrogen was 27 mg. per 100cc and the prothrombin time 14 seconds (normal, 14 seconds). Inthe electrocardiogram, compared with previous tracings, the T waves in the chest leads had become more deeply inverted; the T waves in Leads V_3, and

V_4 and V_5 were inverted at this time. Roentgenogram of the chest was unchanged; a Graham test demonstrated a normal gall bladder.

On the fifth day the patient experienced crushing chest pain extending to the back; it was the most severe pain that he had had and required Demerol for its control. It persisted for about twenty-four hours, shifting to the left precordium and being accompanied by pain in the left shoulder and neck. A white-cell count was 22,000 and an electrocardiogram showed upright T waves in Lead V_1 with elevated ST segments and deep late inversion of the remaining T waves in the chest leads with dramatic ST-segment elevation. Physical examination revealed a temperature of 100°F., blood pressure of 160 systolic, 86 diastolic and fair heart sounds; the aortic second sound was louder than the pulmonic and an apical pericardial friction rub extended inwards to the left sternal border. Anti-coagulant therapy was begun and a satisfactory therapeutic level of prothrombin was maintained. He was free of chest pain until the tenth day; examination during this time showed a regular rhythm, no gallop or friction rub and clear lungs. On this day he had several episodes of right-chest and shoulder pain and one of diffuse chest and abdominal pain, all of which required Demerol for relief; the white-cell count was 11,400 and an electrocardiogram showed the elevation of the ST segments in Leads 2 and 3 have disappeared. On the eleventh day examination showed the heart to be enlarged to the left, with the point of maximal impulse 2 cm. beyond the mid-clavicular line in the fifth intercostal space and a Grade III to IV systolic murmur, maximal at the lower left sternal border and well transmitted to the apex. The pulmonic second sound was louder than the aortic second sound but was not accentuated. There were a few rales at the bases of the lungs. Digitalis was begun. He continued to feel fairly well until the twentieth day, when he began to feel extremely weak; examination showd dyspnea on slight exertion, distended neck veins pulsating at a 30° angle, considerable moist rales at both lung bases, dullness and decreased breath sounds at the right base, tenderness in the right upper quadrant of the abdomen, heart findings unchanged, slight edema of the right foot, a temperature of 100.3°F., and a white-cell count of 13,600. He was given ammonium chloride, Mercuhydrin and antibiotics. His temperature continued to be elevated up to 102°F., and he remained critically ill. Moist rales could be heard over most of the chest, and a diastolic gallop and a definite apical systolic thrill became evident.

He died on the twenty-fifth day.

Dr. Roger F. White

The case for discussion today is that of a 76-year-old man, remarkably free of complaints and signs of degeneration that one would normally expect in a man of this venerate age. Let us trace his headlong pursuance of the trail from apparently robust health to demise in a short span of 79 days.

His first complaint was of mild shortness of breath. Then, on the day prior to admission, he experienced two episodes of tightness across the midsternal region. There was no radiation of this discomfort, sweating or dizziness; however, palpitation was experienced. Each episode lasted about twenty minutes, as did a similar attack on the morning of admission. His past history was remarkably free of symptoms referrable to the peripheral vascular, urogenital or gastrointestinal symptoms. Although this does not exclude their involvement in this case, I believe that we are dealing here with a disease of the myocardium.

There are a few laboratory and clinical findings that would have helped us a great deal, namely:

1. Did this man have a positive serology.
2. Had he ever had a recorded blood pressure higher than noted here, and concomitantly, what did his retinal vessels look like.

There are three conditions that are especially likely to be confused with coronary artery occlusion; they are acute pericarditis, pulmonary embolism and dissecting aneurysm. I dispensed with the first two at once because of a lack of compatible laboratory and clinical findings. The last possibility, dissecting aneurysm, fascinated me to such an extent that I made a determined search of the literature concerning this condition, which I am not likely to encounter with any great frequency in m ypractice of pediatrics.

Considerable interest has developed in the diagnosis of dissecting aortic aneurysm which is often confused with acute coronary thrombosis. The pain in the former comes with even greater suddenness than in the latter. The pain in the chest is crushing and may extend to the back and at times even to the legs. Hypertension is

almost invariably found and it tends to persist after the attack. Fever and lekocytosis develop but there are none of the cardiac irregularities or a friction rub that develop in coronary thrombosis. Although the electrocardiagram in most cases remains unchanged and fails to show significant changes in the ventricular complexes, T wave changes resembling myocardial infarction may appear as a result of pressure on one of the coronary arteries. Although this was an interesting possibility, I was forced to discard it.

It seems to me that we have here an example of relentless progression of coronary insufficiency to myocardial infarction and rupture of the interventricular septum. The electrocardiogram is our greatest helper in this case, although clinical signs particularly late in the course of the disease are of inestimable value.

The first electrocardiogram leads us to suspect a localized anterior infarct and partial coronary occlusion. However, the patient was discharged on the eleventh hospital day with orders to restrict activity. Thirteen days later, during which time the patient had done fairly well, he was readmitted with an exacerbation of symptoms. At this time, the EKG showed again evidence of localized myocardial infarction. He also complained of pain characteristic of myocardial infarction. Routine laboratory work was not remarkable.

On the fifth day the patient experienced severe crushing precordial pain, accompanied by a marked leucocytosis and an apical precordial friction rub. EKG at this time showed evidence of extensive anterior infarct. Things went fairly well until the tenth and eleventh days when a series of events took place that led relentlessly to his death fourteen days later. During this time, the following clinical findings became apparent for the first time:

1. Cardiac enlargement to the left.
2. A Grade III to IV systolic murmur appeared in the 5th interspace at the left sternal border; this murmur was well transmitted to the apex.
3. The pulmonic second sound, though no louder than formerly, was now louder than the aortic second sound.
4. Progressive right and left-sided cardiac decompensation as manifested by dyspnea, orthopnea, hepatic engorgement and dependent edema.
5. Terminally he developed severe pulmonary dema, a diastolic gallop and a definite apical systolic thrill.

Rupture of the heart is one of the commoner causes of sudden death in the first few weeks after acute myocardial infarction. Martland found this condition in about 7% of 318 cases of coronary occlusion examined by him. While cardiac infarction due to coronary arteriosclerosis and occlusion is by far the commonest cause of rupture of the heart, the latter may also result from bacterial endocarditis, septic myocardial abscesses, dissecting aneurysm of the sinus of Valsalva, gummatous myocarditis, tuberculous perimyocarditis, echinococcus cyst and malignancy.

According to Fulton, one-eighth of the patients who succumb in the first three weeks after acute myocardial infarction die from rupture of the heart. In this series, death from cardiac ruptures occurred within seventeen days in all but one and the average was nine days after cardiac infarction. Krumbhaar and Crowell found the rupture through the left ventricle in 225 cases and through the right in 32. The anterior surface was lacerated three times as often as the posterior.

Rupture of the heart following cardiac infarction leads to hemopericardium, cardiac tamponade and sudden death.

Rupture of the interventricular septum after infarction of this portion of the myocardium is less common than that of the ventricular wall. Edmondson and Hoxie observed thirteen instances of rupture of the interventricular septum compared with fifty-six of the ventricle.

Unlike ventricular rupture, rupture of the septum can be readily diagnosed ante-mortem and may occasionally permit a survival of several months or even up to five years. Clinically, the symptoms are those of severe myocardial infarction associated with intense dyspnea and increasing shock. The symptoms and signs of right sided heart failure may develop rapidly. The diagnostic feature is a loud and roaring systolic murmur which is usually loudest in the 4th and 5th interspaces near the left border of the sternum. A systolic thrill is almost always present in the same region, but it may be absent. The prognosis is almost always extremely poor, partly because the infarction in these cases is usually extensive and partly because of the added circulatory disturbance of the acute perforation itself. In those who survive, even for a few months, there are usually signs and

symptoms of left-and-right-sided congestive failure.

If we consider the sudden appearance of the systolic murmur in the left 5th parasternal interspace as a diagnostic clue, we should think of such possibilities as rupture of a valve cusp or papillary muscle or the effect of a dislodged mural thrombus producing a ball valve effect at the mitral valve.

My diagnosis:

1. Coronary arteriosclerosis
2. Multiple mycardial infarction
3. Rupture of anterior ventricular septum
   a. With death due to left and right chamber failure.

DIFFERENTIAL DIAGNOSIS

Dr. James H. Currens: This man's illness extended over a period of seven weeks from the time of onset until the time of his death. According to the symptomatology, I think it can be fairly well divided into four incidents; the first three, which were quite similar, I would interpret as varied manifestations of coronary heart disease with thrombosis and infarction. The onset of angina pectoris was quite sudden; he had pain on the first day after meals and again early in the morning. The suddenness of onset certainly suggests that the patient had an acute occlusion on that day or the preceding day, most likely due to thrombosis. The duration of the pain did not suggest infarction at that time. The electrocardiogram revealed slight T-wave abnormalities mainly in the precordial region close to the sternum; however, the abnormalities were those usually seen with minor injury, not with a good sized infarction. Physical examination revealed a systolic murmur that, in this elderly man with an emphysematous chest, I would interpret as arising in the aortic valve or just beyond, possibly related to slight dilatation of the aorta or early stiffening of the aortic valve.

May I see the X-ray films? It always disturbs me that the emphysematous nature of the chest is noted in the x-ray report rather than on physical examination.

Dr. Stanley M. Wyman: The scarring in the upper lung fields is well seen; the upper lobes, in particular the right upper lobe, are considerably reduced in size. This is presumably an old process. However, one spot film of the region of the bifurcation of the major bronchi shows very poorly the upper-lobe orfice, and I cannot make any definitive statement about its integrity. The emphysema of the lungs is well demonstrated. The heart shadow is not greatly enlarged, but in view of the severe degree of emphysema it may be larger than it seems.

Dr. Paul D. White: Do you base that diagnosis of emphysema on the increased depth of the chest.?

Dr. Wyman: The interpretation of emphysema is based on the increased depth of the chest and the low position and rather flattened contour of the diaphragm. The aorta is tortuous, as described in the protocol, but not unduly so for a man of that age.

Dr. Currens: Perhaps some stiffening of the aortic valve cusps might better explain that systolic murmur than dilatation of the aorta beyond.

Dr. White: I thought it was louder at the apex than in the aortic area.

Dr. Currens: I would think that would still be compatible; in this age group with emphysema, aortic systolic murmurs are not infrequently hear better at the apex than in the aortic area.

Dr. White: Would not the character of the murmur be of some importance?

Dr. Currens: The murmur is not described as being musical in character. Often times aortic murmurs have a high frequency. It apparently was not a very loud murmur.

Before the patient left the hospital at the time of the first admission he had choking and dyspnea, suggesting angina decubitus. On the twenty-fourth day after the first episode, he had another attack of substernal pain that lasted an hour and certainly was suggestive of more than coronary insufficiency, although coronary insufficiency can occasionally last this long. There were progressive changes in the electrocardiogram that would lead one to suspect further injury; I would be inclined to believe he had myocardial infarction at that time, although there was no fever or leukocytosis to substantiate this.

The third episode occurred on the twenty-ninth day of the illness and on the fifth day after the second entry. At that time he had a pain lasting twenty-four hours and extending through to the back. There were leukocytosis, fever and further changes in the electrocardiogram — elevation of the ST segment, particularly in the precordium close to the sternum, which can result from myocardial infarction or from

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pericarditis. A friction rub was noted. To find that the pain went through to the back is disturbing. One might consider dissection of the aorta under these circumstances, but there was no appreciable hypertension, and the pain of myocardial infarction does occasionally extend through to the back. At that time it was evident that he had a sizable myocardial infarction, but he got along quite well.

On the thirty-fourth day the fourth important event happened — he had right-chest pain, shoulder pain and diffuse abdominal pain, which is difficult to explain. There may have been further infarction of the heart, of course. The right-chest pain suggested the involvement of the lung itself by embolization and pleuritis. It is possible for embolization of the lungs to occur with the rupture of an interventricular septum; I shall consider that later. The systolic murmur changed considerably at this time — it became quite loud, was loudest over the left lower sternum and was apparently well heard at the apex. This seemed to be an important occurence; it was accompanied by an accentuation of the pulmonic second sound, indicating increased pulmonary arterial pressure, and was followed by signs of weakening of the heart muscles, cardiac insufficiency and congestive circulatory failure.

In the analysis of the final episode, which seems to be the important feature in this case, there are two or three possibilities. Rupture of a papillary muscle, which occurs occasionally as a result of posterior-wall myocardial infarction with appreciable mitral regurgitation, should be considered. The systolic murmur, the increase in the pulmonic second sound and congestive failure are quite compatible with such a diagnosis. The fact that most of the electrocardiographic changes were in the precordial leads close to the sternum would suggest anterior myocardial infarction. The systolic murmur, best heard close to the sternum would suggest anterior myocardial infarction. The systolic murmur, best heard close to the sternum, would argue against mitral regurgitation. There was no evidence to suggest subacute bacterial endocarditis, which might rupture chordae tendineae rather than apapillary muscle. Not too long ago, a case was presented here in which a systolic mumur of high frequency described as a musical murmur resulted from a mural thrombus in the left ventricle producing a certain amount of aortic stenosis. A systolic murmur in the lower sternum might result from tricuspid regurgitation, which is something we do not consider quite as often as we should. Not only the location of the murmur but also the venous distention is quite consistent, but no deep jugular pulse was mentioned in the protocol. There is no reason to believe that there had been dilatation of the right side of the heart as in cor pulmonale — acute or chronic.

One is left with diagnosis of rupture of the interventricular septum, which is always first considered when these murmurs appear after myocardial infarction. The points in favor of this are the localization of the murmur along the left of the sternum and the fact that the electrocardiogram indicated that most of the infarction involved the anterior portion of the heart. That the episode occurred about ten days after the patient had the third attack of pain is quite consistent with a rupture of the muscle, which usually occurs in the first two weeks. That would be consistent with a rupture of either the septum or the papillary muscle. The rapid decline in heart failure certainly indicated that something drastic happened. Against the diagnosis would be the fact that no involvement of the septum was noted in the electrocardiogram — one would expect to find impairment of the interventricular conduction, which was not present. If, however, the infarct were close to the apex, it might involve the septum without impairing the conduction. The apical systolic thrill is a little disturbing. I wonder if I might ask whether there was a comparable murmur in that area, and whether any mention is made of the distribution of this murmur, since that seems to be quite important.

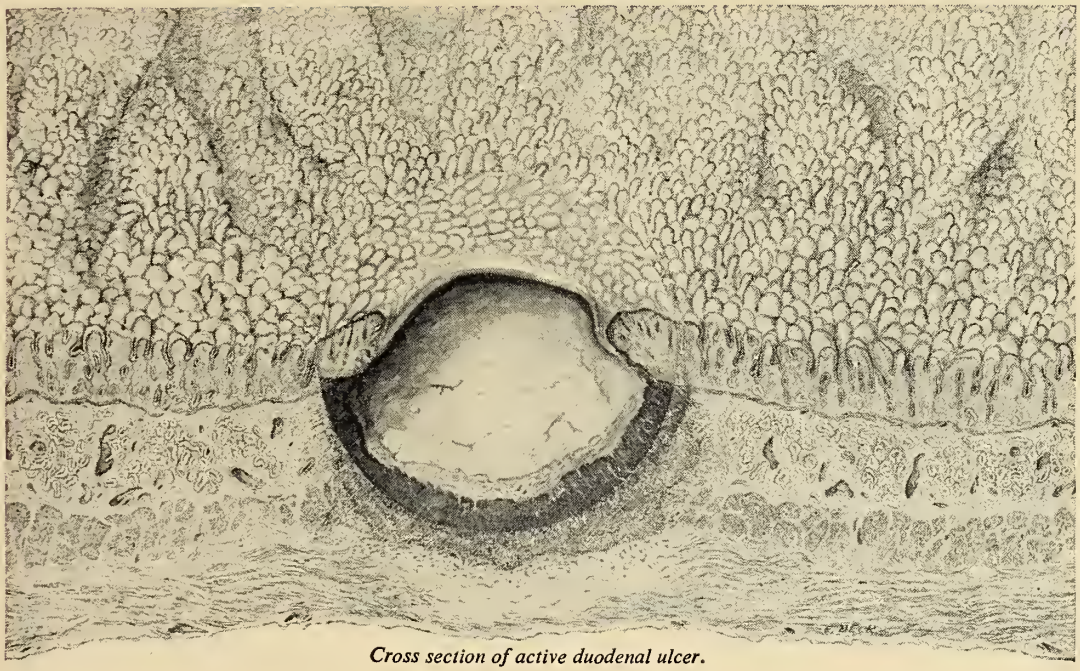
Dr. Francis G. Barnum, Jr.: The murmur did not change in character; the thrill appeared the day before death.

Dr. Currens: There seems to be a slight disagreement concerning the thrill that was noted in the apex and the murmur that was described as being maximal over the lower left border of the sternum. Had there been a distinct change in the point of maximal intensity of the murmur, or was it thought to be about the same on both examinations?

Dr. Edwin O. Wheeler: As I recall, it was maximal between the sternum and the apex at all times.

Dr. Currens: We seem to be forever attempt-

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2. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: A Clinical Evaluation of a New Antiholinergic Drug, Pro-Banthine, Gastroenterology *25*:416 (Nov.) 1953.

SEARLE

tempting to make the diagnosis of rupture of the interventricular septum but have not been very successful at these conferences in the past. It seems to me that the course of events in this patient and the physical findings are quite in keeping with this diagnosis. I prefer to think this was the most likely explanation for the systolic murmur and the rapid downhill course. I think the patient had recurrent multiple myocardial infarctions involving the apex and the lower portion of the septum, with rupture and the production of a septal defect.

Dr. Wheeler: When this murmur first appeared, it was maximal between the lower left sternal border and the apex; we were inclined at first to think it was more likely due to mitral insufficiency than to a ruptured septal defect, because there was no thrill associated with it and the patient's condition was fairly good. As he went downhill fairly rapidly and a thrill appeared, we thought very much as Dr. Currens did, that murmur was due to a rupture of the septum or of a papillary muscle.

Dr. Barnum: About five days before death the patient spiked a temperature of 102°F., and rather suddenly went into congestive failure. We thought at that time of the possibility of pulmonary infarction, but the prothrombin time was maintained between 10 and 30 per cent and the legs were consistently negative; we also thought of pulmonary infection, but there was no response to antibiotics.

Dr. White: I am sure that all of us wondered how to explain the febrile episode. There were a number of colds going around at that time. I wondered whether a severe virus cold might have been enough to precipitate the congestive failure or whether the febrile episode otherwise was important in itself. The patient did not respond to therapy for the infection, although such might have been due to a virus that was not susceptible to such medication. There was also a question of infarction of the lung, but the legs always seemed to be all right. I agree entirely with what has been said about the murmur. I was on the fence as to its pathogenesis. There were three possible causes; rupture of the septum, rupture of a papillary muscle and mitral regurgitation associated with increasing dilatation of the heart terminally. However, mitral murmurs generally decrease in intensity with increasing weakness of the heart, so I was in agreement with the idea of septal rupture.

One other point I should like to raise, which must remain in doubt, is whether, if we had given anticoagulants when he was having angina decubitus, the episode of myocardial infarction might have been avoided. Also, I would like to know Dr. Currens' thought about the possible responsibility of the anticoagulant for abetting a septal rupture. We do not have enough statistics yet, I suppose, to know whether patients on anticoagulants are more likely to have septal ruptures than those who are not.

Dr. Currens: I myself am an "anticoagulationist." I do not think there is any convincing evidence that anticoagulants predispose to rupture. A recent study from this hospital failed to demonstrate any significant difference in the incidence of myocardial rupture in patients receiving Dicumarol as compared with those not receiving Dicumarol.

CLINICAL DIAGNOSES

Congestive heart failure.
Myocardial infarction.
?Interventricular septal rupture.

DR. CURREN'S DIAGNOSES

Ruptured interventricular septum.
Myocardial infarctions.

ANATOMICAL DIAGNOSES

Myocardial infarction with rupture of interventricular septum.
Pericarditis, acute fibrinous.
Pulmonary edema and congestion.

PATHOLOGICAL DISCUSSION

Dr. Benjamin Castleman: The pericardial cavity contained about 40cc of hemorrhagic fluid and the entire serosa of the pericardium was covered with a fibrinous exudate, especially over this distended very thin apex, which might be called a cardiac aneurysm. There was a hole in the septum. The myocardium on the right side of the heart was yellowish and obviously infarcted over this entire area; the left ventricle was almost entirely infarcted. Not only anterior wall and septum but part of the posterior wall was infarcted. The infarction was in all stages; a large part was quite acute, with necrosis of muscle fibers and well developed polymorphonuclear leukocytes; in other areas, there was beginning disintegration of polymorphonuclear leukocytes; and in still other areas, evidence of healing with connective-tissue proliferation and phagocytes filled with hemosiderin; thus the patient had been having infarctions off and on for several weeks.

Dr. White: The infarction might have explained the final fever.

Dr. Castleman: I think it did. We have no evidence of any recent thrombosis in any of the coronary vessels. They all were very sclerotic and narrow, so maybe the anticoagulant did prevent thrombosis, although it did not prevent the very recent infarction.

Dr. White: Did the blood pressure drop?

Dr. Barnum: It was 110 systolic, 80 diastolic until the day before he died.

Dr. White: This is another case of infarction without thrombosis, just as one can have thrombosis without infarction.

Dr. Castleman: There was no evidence of infarction in the lungs; the lesions at the apices were healed scars of tuberculosis. The lungs showed edema and congestion.

Dr. Wheeler: Did he have a mural thrombus in the heart?

Dr. Castleman: Yes; there was a large mural thrombus over most of the infarcted area.

Dr. Wheeler: The anticoagulants, then, did not prevent the formation of a mural thrombus!

CANCER SEMINAR PROGRAM

Edward H. Bregman, M.D., Executive Chairman and Mrs. Robert E. May, President, Arizona Division, American Cancer Society, announce the Cancer Seminary Program for 1956 to be held at Paradise Inn, January 26, 27 and 28.

January 26 — Morning

NEOPLASMS OF THE THYROID GLAND
Juan del Regato, M. D.
Herbert C. Maier, M.D.
Ian Macdonald, M.D.
David A. Wood, M.D.

PROBLEMS IN THE MANAGEMENT OF NEOPLASMS OF LIVER & PANCREAS
Averill Leibow, MD.
Alexander Brunschwig, M.D.

Afternoon

LEUKEMA and LYMPHOMAS
David A. Wood, M.D.
Alexander Brunschwig, M.D.
Alfred A. Gellhorn, M.D.
Juan del Regato, M.D.
Herbert C. Maier, M.D.

January 27 — Morning

EVALUATION OF RECENT TREATMENT OF CANCER OF STOMACH
Leo G. Rigler, M.D.
Alexander Brunschwig, M.D.

CANCER OF SKIN
Juan del Regato, M.D.

REVIEW REPORT OF AMERICAN CANCER SOCIETY
Brewster S. Miller, M.D.

Afternoon

CLINICO-PATHOLOGICAL SEMINAR — NEOPLASMS OF THE LUNG
Averill Leibow, M.D.
Leo G. Rigler, M.D.
Herbert C. Maier, M.D.
Alfred A. Gellhorn, M.D.

January 28 — Morning

PSYCHIATRIC ASPECTS OF MALIGNANT DISEASES
C. H. Hardin Branch, M.D.
Rupert B. Raney, M. D.
Ian Macdonald, M.D.
Alfred A. Gellhorn, M.D.

TUMORS OF THE SPINAL CORD
Rupert B. Raney, M.D.
David A. Wood, M.D.
C. H. Hardin Branch, M.D.

SPEAKERS

Juan del Regato, M.D., Director, The Penrose Cancer Hospital, Colorado Springs, Colorado.

Herbert C. Maier, M.D., Thoracic Surgeon, New York City.

Ian Macdonald, M.D., University of Southern California, Los Angeles, California.

Averill Leibow, M.D., Professor of Pathology, Yale University School of Medicine New Haven, Connecticut.

Alexander Brunschwig, M.D., Professor, Clinical Surgery, Cornell University Medical College, Surgeon, Memorial Hospital, New York City.

Alfred A. Gellhorn, M.D., Associate Professor of Medicine, Columbia University, New York City.

Leo G. Rigler, M.D., Professor of Radiology, University of Minnesota, Minneapolis, Minnesota.

Brewster S. Miller, M.D., Director, Professional Education, American Cancer Society, New York City.

C. H. Hardin Branch, M.D., University of Utah, Salt Lake City, Utah.

Rupert B. Raney, M.D., Neuerosurgeon, Los Angeles, California.

David A. Wood, M.D., Professor of Pathology, Stanford University, Palo Alto, California.

Moderators will be announced at a later date.

THE President's PAGE

DR. ELMER HESS, PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION, VISITS ARIZONA

THIS MONTH MARKED AN UNPRECEDENTED OCCASION. A FIRST VISIT, I BELIEVE, THAT ARIZONA HAS EVER HAD OF A PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION. DR. ELMER HESS SPOKE AT THE MARICOPA MEDICAL SOCIETY IN PHOENIX, AND THE SUBSEQUENT DAY, BEFORE THE PIMA COUNTY MEDICAL SOCIETY.

DR. HESS IS A POWERFUL SPEAKER, A MAN WHO SEES HIS OBJECTIVES CLEARLY, AND WHO DEVOTES MUCH PERSONAL TIME AT A GREAT SACRIFICE, TO VISIT THE CONSTITUENT STATE SOCIETIES.

WE WISH TO PERSONALLY THANK DR. HESS FOR MAKING THE VISIT TO ARIZONA. ALL OF US WHO HAD THE OPPORTUNITY TO HEAR HIM, WERE DEEPLY IMPRESSED WITH HIS ATTRIBUTES AND WITH THE OBJECTIVES OF THE AMERICAN MEDICAL ASSOCIATION. HIS SPEECHES WERE AN INSPIRATION TO US IN ARIZONA AND I BELIEVE WILL ADD TO THE ADHESIVENESS OF OUR DOCTOR AND DOCTOR RELATIONSHIP, AS WELL AS OUR DOCTOR AND PATIENT RELATIONSHIP.

AGAIN, THIS PUBLIC EXPRESSION OF OUR SINCERE APPRECIATION OF OUR PRESIDENT, DR. HESS'S VISIT TO ARIZONA.

HARRY E. THOMPSON, M. D., PRESIDENT
ARIZONA MEDICAL ASSOCIATION

ARIZONA MEDICINE

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

Editorial...

A LETTER TO SANTA CLAUS

Is it possible for a Good Little Medical Journal to write a Christmas letter? ARIZONA MEDICINE has faith, and hopes for better things, and doesn't deserve any sticks and stones in its stocking. So here we go! Hi Dancer! Ho Prancer!

Dear Santa:

We are quite a large family, and we don't want to bother very much. You were so good to us last year, and we are still grateful for the things you always bring down the chimney. We couldn't get along without the Massachusetts General Hospital, and the photogenic Women's Auxiliary, and the man who reads enough books to review, and that person who uses Osler's name. Please, Mr. Claus, give us a year's supply of them again!

Bobby Lee, the Editor, has been a very good boy, and all he wants is one gold-plated IDEA every month, with white side-wall tires.

His secretary, 'Hysteria,' would like to have a small necklace made up of guaranteed replies to all letters in 48 hours, set with small diamonds in between. (She likes candy too, please).

Johnnie the manager keeps dreaming of a white Christmas, with a snowstorm of advertising. If you can carry it in your sleigh, could you bring him the Pfizer Laboratories, gift-wrapped?

Uncle Jim the printer likes to be praised, but he also wants proof of everything. He used those 'Ten Lessons in Linotyping' last year, but he'd like a case of bottled in bond proof-readers.

Our cousins Cleve, Louis, Frankie, Bill, Robbie, Les, Warner and Elmer are on the editorial board. They are real poor, since they have to live on credit-lines. I think they'd be glad to have about a bushel of nice fresh articles, a dozen short reports, some spicy papers, and a few jars of research. If you have any ear-muffs and some not too badly worn cliches, please bring them along.

Our father, the Arizona Medical Association, always says that you can save his best things for the annual meeting. Maybe you could just give him some gift-certificates labelled—"I will be able to accept your invitation to speak." If they are signed by ten doctors as good as last year, he'll be pretty lucky (and so will we if they let us have their papers afterwards).

Mom deserves the best, we always say. She may be an Auxiliary to some, but she runs lots of thing behind the scenes. She always has something cooking, and we like her a lot, so maybe she could have a 10-piece set of Revere ware? And another national officership? And about 20 dozen orchids?

Uncle Sal of the health department couldn't ask for a better package than the plum pudding he got in 1954. When he stuck in his thumb and pulled out the TB control program I thought he'd never stop smiling. Maybe he could have a camel's hair polio coat, with no paralysis in this year's model?

So, dear Santa, we'll be very happy with what you bring. We know there'll be some surprises, which are lots of fun. We'll have the rooftop cleared at 15 East Monroe Street, and an extra landing field on top of the Heard Building. Meanwhile hundreds of us wish you a Merry Christmas!

Yours hopefully,
ARIZONA MEDICINE

Notes from the EDITORS PEN

FEDERAL LEGISLATION

During the 83rd Congress, 16,470 bills were introduced in both sessions of which 407 pertained to medicine, as reported by our Washington Office. In the first half of the 84th Congress, 11,914 measures were similarly introduced, 403 pertaining to medicine being reported, which in effect doubles the legislative load for all concerned.

The AMA Committion on Legislation so far this year considered 284 new bills, embodying 92 major legislative proposals. Of the 403 medical bills reported, 49 have had hearings. Eleven of the 49 have been favorably reported by the Committee, of which seven have passed the House where introduced. Five of the seven have passed both Houses and have been signed by the President. AMA supported four of the five that became law.

JOINT COMMISSION ON MENTAL ILLNESS & HEALTH

For the first time in the 47 years' history of governor's conferences, medical specialists were asked to participate in a round-table discussion. A graphic account of the broad mental health problem, as it exists todays, was presented by Dr. Leo H. Bartemeier, Chairman of the AMA Council on Mental Health. Approval and endorsement by official resolution of the conference of the new Joint Commission on Mental Illness and Health, sponsored and established by AMA, the American Psychiatric Association, and twenty other national organizations interested and working in the field of mental health, was the crowning achievement.

39 STATES READY FOR "WAIVER OF PREMIUM" PROGRAM

A total of 39 States, plus the District of Columbia, Hawaii, and Puerto Rico, have entered into agreements with the U.S. Department of Health, Education, and Welfare to carry out the "disability freeze" program of the social security act. Arizona will be among them. Under this plan, enacted last year, the pension a disabled worker would receive at age 65 is "frozen" or not reduced because of the years he is employed. Most states have selected their vocational rehabilitation agencies to operate this program. State officials are in immedate charge of administering the program, but subject to federal review and investigation.

The same machinery being used for administering medical examinations under the new "disability freeze" law will be used to handle the compulsory disability insurance program, if that plan is enacted next year. Under the proposed legislation, the disabled worker would get his pension at age 50, rather than waiting until age 65. Federal disability insurance is opposed by AMA because (a) machinery at the federal level to supervise the certification of disability would project the government into the medical practice picture, (b) cash disability benefits would be a threat to the rehabilitation program, and (c) physicians would be under pressure from patients to make certifications of disability.

AIR FORCE NEWS — DOCTOR

Air Force physicians, dentists and veterinarians now are being addressed verbally as "doctor"; its official policy. In written correspondence they still will be referred to by military rank.

1956 ANNUAL MEETING

The Scientific Assembly Committee has been working throughout the summer months developing the program for the 65th Annual Meeting of our Association which will be held in Chandler, Arizona, April 25 through 28, 1956, with headquarters at San Marcos Hotel. An early release of the tentative scientific section program is anticipated.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

THE 'Penn Test' for cancer, known also as the 'Penn-Dowdy Test', has been up and down like a novice boxer. It is supposed to be a serofloc-culation reaction, and announcements have been made of its value for several years.... In May 1954 the Cancer Commission of the Calif. Med. Ass'n. released a criticism in which the test was said to be non-specific, with false positives from a half dozen diseases or conditions, and false negatives in the presence of cancer.... Late this summer U.C.L.A. medical school, where the Penn Test has been investigated, gave forth a few optimistic newspaper interviews. Wham! The Cancer Commission re-released its 1954 statement, saying there was no change in their attitude, and as yet no useful serologic test for cancer.

ASTHMATICS may need a trial of almost any logical therapy. The use of Banthine (methantheline bromide) has been recommended by Sjoerdsma and Dodge of the USPHS at Bethseda, and quite a few people have tried it. The answer, so far, is 'maybe'... It produces some relief of symptoms, during an enhanced pulmonary ventilation. . . . The dose is 50 mg in 10 cc of isotonic saline, given IV over one minute's time. The effect is by way of the autonomics, with a blocking of the parasympathetic (vagal) nerves.

We are somewhat remote from Irish medicine (except that which is practiced by the Arizona Gradys, Donahues, O'Hares, Doyles, Mulligans, and the like). Peter Ashe of St. Michael's in Dun Laoghaire has published a small treatise on 'ABDOMINAL AUSCULTATION' which can be reviewed with profit.... The increase or decease of peristalsis indicates an abnormality of the intestine or peritoneal cavity. The normal is an occasional high-pitched tinkling.... Peristalsis is absent for 1 to 3 days after abdominal surgery. It is increased in strength and frequency in intestinal obstruction, and is most important in low-grade lower intestinal shutoff, since the signs of emesis, etc., higher up are absent. Purging and enteritis can cause the same increase.... Unrelieved obstruction can merge into a secondary ileus, with a loss of sounds.... Absence of peristaltsis plus rigidity confirms a perforated peptic ulcer. A continued lack of sounds is a definite indication for surgery in cases of ruptured hollow viscus, spleen, liver, or for ectopic gestation.... Mesenteric thrombosis and acute pancreatitis are also frequently accompanied by a decrease or absence of perstaltic sounds.

"The NONINSTITUTIONALIZED AMBULATORY AGED DO NOT CONSUME AN ADEQUATE DIET, particularly in vitamin C", say Kaplan, Landes, and Pincus of the N.Y.C. Dep't. of Health. Almost all of a series of 53 people over the age of 60 years were deficient.... The major needs were vitamin C, protein, iron, calcium, and actually in caloric intake.... The answer to control of the situation is at least a quick questioning of such persons; an improved food intake; and balanced supplements for a preliminary (or continued) period.

REDUCTION OF GAMMA GLOBULIN has been classified by Gitlin of Harvard into three types, — 1. Congenital agammaglobulinemia, 2. adult agammaglobulinemia, and 3. transient or physiologic hypogammaglobulinemia.... This list is inclusive enough so that almost anyone with an infection, or series of infections, could be considered.... They can be tested for antibodies. They can be screened for blood grouping, since isohemagglutinins are absent.... Normal values of plasma gamma globulin are 600 to 1,200 mg. per cent, but electrophoresis can't measure the low levels and a method called 'immunologic analysis' should be used to show levels of 4 to 18 mg. per cent. The congenital levels are very low, but adults may range as high as 100.... The congenital type appears only in males, whereas the adult type involves either sex, and may be acquired.

Every now and then a case of HEMOPTYSIS is passed around from G.P. to surgeon to E.N.T. to chest specialist. In spite of all the diagnostic tests and x-rays there seems to be no origin.... Anderson, Buechner and Ziskind report that 25 per cent of respiratory tract hemorrhages have no apparent source. They believe that bronchitis, SIMPLE BRONCHITIS, can often be the cause. ... The bleeding is bright red and without clots. There may be symptoms of bronchitis, but the chest films are negative. Bronchoscopy should be done, preferably during the bleeding.... This emphasis on bronchitis as a cause brings us back, full cycle, to what some clinicians used to do routinely before TB, neoplasm, bronchiectasis, and calcifications were ruled out,—blame a bronchitis.

FECAL IMPACTION has been treated (but only in women) by Birnbaum of Portland in a logical

but possibly novel way.... The patient is placed in the Sims, or left lateral prone position. The index and middle finger of the operator's right hand are introduced into vaginal vault. The fecal mass is moved anally by a gentle clawlike movement.... Sphincter spasm can be relieved by morphine, or even light general or caudal anaesthesia.... Only cases with asthenia or exhaustion or where other methods have failed (including the new detergent we mentioned last month) need have this procedure.... If Hippocrates first described the method we wouldn't be surprised.

The Detroit experience with HOME CARE OF TUBERCULOSIS, as reported by Paul Chapman, is definitely not good. This is in contrast to the feeling in at least two other large cities, tho their conclusions do not fit the results.... After almost four years of trial Detroit finds that "home treatment is not recommended for active tuberculosis, particularly when tubercle bacilli are present in the sputum".... "Adequate home treatment" might be enough in some favorable cases, but it is hardly ever possible. The newly diagnosed case is in need of "proper orientation and planning". An improvement in the bed shortage has eliminated the need for a pre-san chemotherapy program. Etc.

Peter Forsham, versatile European endocrinologist at the University of Cal. has a few pearls concerning THE ADRENALS.... He confirms the fine effect of Metecortin, with its low dosage, low sodium retention, etc. One disadvantage is an elevation of gastric acidity, and this should be looked for and corrected by buffering.... The modern therapy of the uncommon Addison's disease has become more simple and effective. Desoxycorticosterone (in the form of trimethylacetate) need only be given once a month, plus cortisone or a similar drug daily.... Cortisone may be given to suppress ACTH, and thus modify the excretion of 17-keto-steroids.... It has long been known that there is a large content of vitamin C in the adrenals. It must have a function, but there is no sound fact, or even theory, to explain it. Here's a good research problem.

Chase, of the San Fernando V.A. Hospital in California, has been showing his new retrograde BRONCHOSCOPE-AND-CATHETER equipment in Denver, Albuquerque, and Los Angeles. It is made by the American Cystoscope Mfrs., makers of the Broyles 'scope. It is arranged for selective catherization of branch bronchi, and is a very neat device. It can be used to aspirate a bronchus, lavage it, shrink it with a decongestant, or fill it with radiopaque oil.... When Dr. Chase was asked whether someone hadn't reported the method several years ago, he said "Yes. I did. But no one could make the equipment until this year."

The Medical Annals (of the D of C) contains a good analysis of the conflict between 'CONSERVATISM AND THE AGE FACTOR'. Youth wants Age to step aside. Youth wants progress, and Age becomes too conservative.... Dr. Oldster has learned that new ideas are seldom new, and may lead to old mistakes. . . . He often waits, and plays it safe.... Wealth, physical deterioration, position of responsibility, etc., may lead one to be conservative. As a matter of fact the Dr. Youngsters may become less radical if they run for or accept an official position. They realize that every road has two sides and a middle.

The treatment of VASCULAR HEADACHES is well outlined by Baxter in the Ohio State Medical Journal. The most common types are histamine cephalalgia, migraine, and tension headache. The diagnostic points are also of interest. ... He subdivides therapy into active symptomatic relief of the acute attack, and prophylactic interval therapy.... Migraine is still best managed by trying to reverse the vascular dilatation, using ergotamine tartrate or its caffeine derivative. Prevention is difficult, and may require psychotherapy, sedation, personality readjustment, and change of the mode of living, or the use of histamine; only sedation is easy. . . . Histamine cephalalgia may often respond to histamine desensitization, now given subcutaneously.... Chronic 'tension' vascular headaches may also be given a whirl of histamine, plus all of the other methods mentioned, plus allergic desensitization, plus thyroid extract, plus examination by a specialist if all else fails.... Dr. Baxter likes histamine.

A CONFLICT BETWEEN THE PHYSICIAN AND THE PHARMACIST has gone on for the past few years without a great deal of publicity or awareness. The moot point was the dispensing of drugs by the physician.... Until June 1954 it was ethical to do so. For one year after that date, by a ruling of the AMA House of Delegates, doctors were commanded to cease competition with pharmacies.... In June 1955 the decision was reversed "as long as the patient was not exploited". The pharmacists are up in arms, especially in states where they are strongly led or organized. New York, Wisconsin, and California are starting legal action (and in California, at least, the strength of their lobby is close up to that of the highway commission)... The best interest of the patient is the prime factor, however. In crowded cities the M.D.s do not dispense. In sparsely settled areas a prescription couldn't be filled within a radius of 20 to 50 miles. . . . The whole controversy may have to be solved at a local or regional level, they say.

Someone, called 'Per Ceptive Observer', has suggested that we write a paragraph concerning

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Well over 90% of the hospital and surgical claims are approved for payment without either you or the patient filling out any claim forms. It looks like the people here at HBA are saving each of you a fair amount of time by eliminating these forms.

Now in a few cases, either on a new membership or where the coverage was written excluding a certain condition, it is necessary that we ask for a claim form. These borderline cases are always hard to decide anyway and we will greatly appreciate your giving all the information possible.

If you have any suggestions regarding our service we will be glad to have them.

Any time you are by our offices here at First Street at Willetta, drop in and have a cup of coffee with me.

Very truly yours,

Duke R. Gaskins, M.D.

DRG:bw

THE HIGH COST OF DRUGS (such as vitamins and antibiotics), and describe a way to lower it. ... His/her idea is to dispense with the costly 'detail men', who must spend 2 hours of time to see an unwilling physician for 8 minutes.... The industry as a whole spends $50 million on direct mail advertising, $16 million on journals, and about 200 million for detail men. They are "as antiquated a system in modern marketing practice as the horse drawn wagon peddler".



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ARIZONA Pharmaceutical PAGE

OUR RESPONSIBILITY

By Newell Stewart

MEDICINE and pharmacy have been climbing the ladder of progress for centuries but the past decade has enabled us to reach unprecedented heights and as we look down we can see the clouds we have climbed through. They represent the age-old diseases that we have been able to conquer. Research scientists in colleges, in medical centers, in our pharmaceutical laboratories and as individuals are opening new vistas through the haze that has surrounded the treatment of disease but as we climb through one cloud bank, we are confronted with others on a higher level. There are as many rungs on our ladder as there have been discoveries in pharmacy and medicine. In earlier times most of our developments came as a result of scientists working independently but things today are vastly different. Research has become teamwork among trained specialists in many fields — pharmacists, physicists, pharmacologists, physiologists, biologists, chemists, engineers and many others making use of complicated equipment undreamed of a couple of decades ago. The chemical and pharmaceutical industries now employ 35,000 persons in research as compared with 6,500 twenty years ago. New products are being developed so rapidly in this expanding segment of our economy that it is not at all unusual for a company to make a substantial investment in research and production facilities only to have the item being developed replaced by another long before the original investment has been returned. Pharmaceutical research has been demonstrated by the fact that 90% of the million and more prescriptions filled by your pharmacist today could not have been filled ten years ago because the ingredients had not yet been discovered or methods of production had not been worked out. Pharmaceutical manufacturers have recognized research is good business that pays off both in lives and dollars. It is the lifeblood of the pharmaceutical industry and certainly is good business for the consumer.

At the recent meeting of the International Congress of Pure and Applied Chemistry at Zurich, Switzerland, the announcement was made that the structure of Vitamin B-12 had been determined at Cambridge University and that a hormone, which is essential to life, known as Aldosterone, had been synthesized in the Ciba pharmaceutical laboratories. Now we know we must arrange the sixty-three atoms of carbon, ninety atoms of hydrogen, fourteen atoms of nitrogen, one atom of phosphorus and one atom of cobalt to produce B-12 in the pharmaceutical factory. The synthesis of Aldosterone adds greatly to our knowledge of the thirty hormones that have been extracted from the cortex of the adrenals. These announcements are being duplicated in every scientific gathering and we are beginning to reach for the top rungs of our ladder of health.

You, as physicians, have been furnished with these expanding tools to be used in your endeavors to prolong life and contribute to the reduction in human suffering. As facilities, manpower and finances are being made increasingly available, our knowledge of plotting the molecular structure of a drug to interact with abnormal human molecules for the control of disease is being realized. Rapid, startling and revolutionary developments resulting in a continuing re-evaluation of the entire human effort involved in the field of the prevention and treatment of disease serves to make all segments of the health professions more interdependent.

No one of us or any isolated group of us can exist in these changing times without constant research, re-evaluation, development and scientific investigation. Our responsibility as pharmacists is able to develop the proper drug for you to use at exactly the time you will need it for your patient. Pharmacists in manufacturing plants, colleges, hospitals and retail outlets are all dedicated to furnishing this service for the eventual conquering of disease.

Organization PAGE

CIVICS

Norman Ross, M.D.

BOYS' CLUBS OF AMERICA, 381 Fourth Avenue, New York 16, N.Y.

THE BOYS' CLUB CODE:

I believe in God and the Right to Worship according to my own faith and religion.

I believe in America and the American Way of life . . . in the Constitution and the Bill of Rights.

I believe in fair play, honesty and sportsmanship.

I believe in my Boys' Club which stands for these things.

"MANY years ago, civic-minded leaders, apprehending the problems of youth, established Boys' Clubs in some of the most crowded areas of our cities. They sought to stop the gap that idle hands can fill with evil. Since this time, they have produced men of leadership in their communities. The feet of thousands have been set on the road of American opportunity."—(HERBERT HOOVER, Former President of the United States, and Chairman of the Board of the Boys' Clubs of America.)

The first Boys' Clubs were established in New England in the 1860's by community groups who felt the need of a non-sectarian organizationtion providing after-school and evening activities and leadership for the less privileged boys. Today Boys' Clubs are located in the poor and crowded areas of cities and also in many small communities where they serve all boys.

Boys' Clubs of America was founded in 1906 by the then existing Boys' Clubs for their mutual benefit and the promotion of the Movement. It was incorporated as a non-profit organization in Massachusetts in the same year.

The purpose is to promote the health, social, educational, vocational and character development of boys throughout the United States of America.

The extent of Boys' Clubs of America include approximately 425 Boys' Clubs in operation coast to coast with more than 400,000 boy members ranging in age from 7 to 20, and with assets of over $100,000,000. These Clubs meet minimum standards established by the national organization.

Each Boys' Club is an autonomous non-profit organization managed by a volunteer board of directors and supported by community chests and united funds or direct contributions.

There are two types of organization membership in Boys' Clubs of America. Those having full membership in the national organization have clubhouses open at least three hours a day, five days a week and employ full-time professional executives. Practically all of them are open six days a week the year round. Those having associate memberships are open a minimum of two and one-half hours per day, three days per week at least nine months a year, and employ a part-time director. This type of Boys' Club is especially adaptable to small communities for operation at low cost.

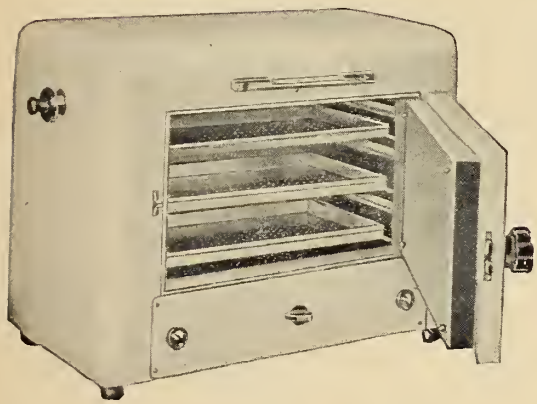
The development of new Boys' Clubs in Arizona has been a slow and arduous task. This organization is relatively new and has not been promoted as intensely as in other parts of the country due to the fact that the directors have been concentrating on consolidating the existing facilities and did not wish to extend themselves beyond the point of stable support, however, despite this situation requests have been made to the Boys' Club Board of Directors during the last year for information and assistance to obtain Boys' Clubs for other communities. A few communities that are making great strides include Scottsdale, Tempe, Williams Air Force Base, South Phoenix and North Phoenix. In each area Boards of Directors have been organized, incorporated and are laying plans for facilities, leadership and program. Boys' Clubs of America are continually assisting the Boys' Clubs of Phoenix and other communities.

The Boys' Clubs of Phoenix have been in continuous operation since 1946. During this period of time they have grown to a membership exceeding 1,500 boys. Their policy is definite: They accept any boys between 8 and 17 years of age into membership regardless of race, creed or economic status. By tradition, the Boys' Club is a poor boys' organization, dues being $1.00 per year. This cost is not only within the reach of boys who cannot afford membership and the

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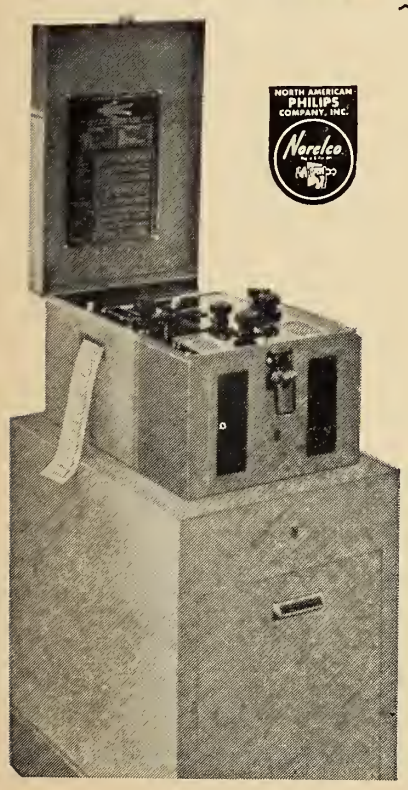
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costs in other agencies, but it also does not deter boys with little interest from trying our Club. If a boy cannot afford to pay his dollar, then odd jobs can be found at the Boys' Club so the boy may earn his dues. Free, or give-away memberships are not advocated.

The purpose of the organization is to promote the mental, moral and physical well being of boys. Games room, gym, library, swimming pool, woodwork shop, group club rooms, and athletic field are the tools used to attract boys into a guidance program where trained leaders may held these boys to help themselves. Whether it it through counselling, interclub activities, field trips or referrals, the Club provides the means of helping the greatest number of boys to solve their problems.

Scholarships are an integral part of the program. Boys with special talents may apply for the Epstein Scholarship Award made available by Boys' Clubs of America. At present Phoenix has two boys on the Boys' Club Scholarship.

The Executive Director in his letter of transmittal of the material for this report, asked that I express his appreciation to the members of the Arizona Medical Association for their support, for their interest, and for their assistance in providing medical attention to the boy members of the Boys' Clubs.

* * * *

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, 120 Broadway, New York 5, New York.

"Owing to improved production of the vaccine and an important change in the schedule of dosage, the immunity level being achieved by children now receiving it may be much higher than the 60 to 90 percent reported by Dr. Thomas Francis Jr. on April 12, 1955, in his evaluation of the field trial. However, these results cannot be known until 1956."

"A new dosage schedule now is being followed. Third shots for all the children who received two shots last spring or during the summer should be given before the 1956 polio season. What the results will be next summer, only time will disclose. But the possibilities certainly stir the imagination." The above quotations are from a statement by Basil O'Connor, President of the National Foundation for Infantile Paralysis.

The National Foundation for Infantile Paralysis Annual Report for the year ended December 31, 1954, is yours for the asking.

* * * *

JOINT BLOOD COUNCIL, INC., 1832 M Street, N.W., Washington, D.C.

JOINT BLOOD COUNCIL FORMED; NATIONAL HEADQUARTERS SET UP

Washington, D.C., October 20 – The Joint Blood Council today announced establishment November 1 of its national headquarters in Washington and the election of Dr. Frank E. Wilson of Washington as its executive vice president and secretary. As executive vice president of the new nonprofit organization, Dr. Wilson will carry out policies determined by the Board of Directors.

Joined in the new venture are the American Association of Blood Banks, the American National Red Cross, the American Medical Association, the American Hospital Association and the American Society of Clinical Pathologists, which have equal representation on the council's board of directors.

The Joint Blood Council is a completely voluntary group, formed by the five national associations principally concerned with procuring, processing, preserving an distributing blood and blood derivatives. Its objective is to coordinate all activities in this field, including the interchange of blood, the standardization of cross-matching and typing procedures, the accreditation and inspection of blood banks, the stimulation of blood donor campaigns and the encouragement of research. In time of emergency, the council will be prepared to assist in setting up new blood banks and to handle requests of the military forces for blood and blood derivatives.

Since blood is derived from human beings only, it should not be sold for profit. However, all services rendered in the collection, storage and administration of blood cost something and are paid for by or on behalf of every recipient of such services. When a service charge is made to the recipient, it may include all or part of the costs of the operation, including normal depreciation but the intentional realization of substantial profit is not approved.

The corporation is formed not for pecuniary profit, and no part of the net earnings of the corporation shall inure to the benefit of any private member, director, officer or other individual, provided that the corporation may pay reasonable compensation for services rendered and reimbursement for expenses incurred. No

when patients complain of itching, scaling, burning scalps—or when you spot these symptoms of seborrheic dermatitis—you can be sure of quick, lasting control when you prescribe



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substantial part of its activities shall be that of carrying on propaganda, or otherwise attempting to influence legislation.

* * * *

THE ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC. 207 Arizona Title Building, Phoenix, Arizona

As part of the planned expansion of services to the aurally handicapped a course in lip-reading is being planned for adults beginning on Monday evening, October 31, 1955, and continuing through Monday evening, January 30, 1956.

The class will meet for ten Monday evenings from 7:00 to 8:00 P.M. Enrollment will be limited and a second section of the course may be started, if the need is sufficient. A second course in lip-reading will be started in February 1956 for new enrollees and for those who have a need to continue the course now beginning.

All adults with hearing problems are welcome to make application for enrollment for this course. A physician's recommendation and hearing test are desirable as a pre-requisite to enrollment. Fees will be determined on a sliding scale based on ability to pay. No one will be ineligible for the class because of financial reasons.

NEW MAGAZINE FOR RESIDENTS

RESIDENT physicians will now have a special journal of their own. This new Journal, RESIDENT PHYSICIAN, makes its bow with the September issue. It will be edited by Perrin H. Long, M.D., and a distinguished Board of Editors from leading medical schools and hospital centers.

The editorial content of RESIDENT PHYSICIAN will consist of original articles geared especially to residents' educational, economic, and personal problems within and outside the hospital. Its main editorial aim is to make the resident a better house officer, and generally provide him with the economic information that he is neither taught nor given in his specialty journals.

Among articles scheduled for early publication are:

Is Private Ward Service Necessary?
Fellowships for Residents.
Preparing for State and Specialty Board Examinations.
Buying a Home and Office.
Fee Schedules.
How to Build a Practice.
How to Gain Fullest Cooperation from the Hospital Administration.

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Woman's Auxiliary

ACTIVE LEADERSHIP IN COMMUNITY HEALTH

THE women in the Yavapai County Medical Auxiliary have always been leaders in civic activities. As auxiliary members and as individuals in other organizations they have been leaders in community health. In a small town such as Prescott doctors' wives seem to be among the first to be called upon to be chairmen of drives for the needy, money raising projects for health research in different fields etc.

As doctors' wives it is important that the individual do as much as she can for community health.

Mrs. James Allen, Auxiliary President, scheduled auxiliary members to be hostesses during open house at the County Hospital in September. New wings were added to the hospital and doctors' wives showed the public through the hospital and explained the new facilities to them. Mrs. Allen along with Mrs. J. P. McNally have seen to it that a needy family have food, clothing and essential things for their well being.

Mrs. Albert Daniels, one of our new members from Whipple, is teaching home nursing and home care of the sick at St. Joseph Academy. She also spent time working in the T.B., Cancer, Polio and Today's Health booth at the county fair in September.

Mrs. Ray Inscore, as a member of the Junior Monday Club works at the "Well Baby Clinic." The Baby clinic has been operating for six years. This organization raises money to support the clinic, pay for supplies, inoculations etc. Children up to five years of age come to the clinic once a month and are examined free of charge by a doctor. This clinic was established for those parents who could not afford medical care for their children.

Mrs. Harlon Harrison is the Yavapai County Junior Red Cross Chairman. She conducts the annual drive for the membership campaign, and other activities.

Mrs. William Marlowe as county chairman of Today's Health had free copies of the magazine to be given to the public at a health booth at the county fair. She scheduled auxiliary members to work in this booth.

Mrs. J. P. McNally is the Chairman for Volunteers for the American Red Cross for Yavapai County. In the auxiliary she is chairman of Community Service. Whenever she knows of a needy family she checks with them and tries to meet their needs with food, clothing etc.

Mrs. Melvin Phillips is Chairman for the Salvation Army Drive for the City of Prescott. She is also a member of the Salvation Army Board. As a member of the Junior Monday Club she helps to raise funds for the Well Baby Clinic and also works at the clinic. She is one of the original members to start the clinic. Through the Junior Monday Club she is chairman to inventory the needs of the County Hospital. This organization will compile a list of the needs and will encourage other organizations to contact them and they will tell them prices of articles. This will make for unification of giving to furnish the new wings at the hospital. She has also spent several days giving audiometer tests to the children at school.

Mrs. William Shepard is a member of the Prescott Community Hospital Board. On this board she serves on the Public Relations committee. As Public Relations chairman for the auxiliary, she now has a series of health records entitled "Sixteen" being played over the local radio station for thirteen weeks.

Mrs. James Sodestrom is President of the Tuberculosis and Health Society for Yavapai County. She is Education chairman for the Cancer Society for Yavapai County. She was responsible for setting up a booth at the County Fair for T. B. Cancer, Polio and Today's Health. In the booth they had pamphlets, posters and a x-ray view box. She is a member of the advisory council of the Arizona division of the American Cancer Society. In the Auxiliary she is the Mental Health Chairman and represents the auxiliary at Community Council meetings. She is also a member of the Arizona state board of Tuberculosis.

Mrs. H. T. Southworth has been elected for the third consecutive year as the Arizona State President of the Crippled Children Society. The Mayor of Prescott has appointed her to serve as a member of the Handicapped Society

for Crippled Children and adults in the city. She is also a member of the County Board of Directors for the Crippled Children Society. In the PEO organization she has worked to completely furnish a room at the Community Hospital. This organization has taken care of this room ever since there has been a hospital. For the second year she is chairman of the Charity Ball that raises money for the Community Hospital. This year the hospital is planning to buy fracture equipment with the money raised from the ball. All Auxiliary members are working very hard on the Charity Ball. As Nurse recruitment chairman she talks to the counselors at the Jr. High and Senior High School. She also talks to students and tries to encourage them to take up nursing as a profession.

These are a few of the activities that members of the Yavapai County Medical Auxiliary are participating in along the lines of Community Health.

Mrs. Dorothy Shepard

CALEB FISKE PRIZE

THE Trustees of what is considered America's oldest medical essay competition, the Caleb Fiske Prize of the Rhode Island Medical Society, announce as the subject for this year's dissertation "Use of Radio-Active Isotopes in the Treatment and Investigation of Disease". The dissertation must be typewritten, double-spaced, and should not exceed 10,000 words. A cash prize of $350 is offered.

For complete information regarding the regulations write to the Secretary, Caleb Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence 3, Rhode Island.

BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

411 Security Building, Phoenix, Arizona

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, October 15, 1955, issued certificates to practice medicine and surgery in this State to the following doctors of medicine:

GEISLER, GORDON, Box 446, Melville, Saskatchewan, Canada.

HOLMES, R. RANDOLPH, 901 West Catalina, Phoenix, Arizona.

KAPLAN, CHARLES B., 2508 Sixth Avenue, Yuma, Arizona.

LIPSCHULTZ, BERNARD M., 4204 N. 18th Avenue, Phoenix, Arizona

MAGEE, JOHN W., JR., 5226 E. 8th Street, Tucson, Arizona.

MARKOVITZ, MEYER, 711 West Thomas Road, Phoenix, Arizona.

McEVERS, JOHN H., Route 4, Box 114, Tucson, Arizona.

NESTER, MURLIN, P.O. Box 87, Bisbee, Arizona.

REAY, GEORGE D., 215 Locust St., Onalaska, Wisconsin.

ROSEN, MURRAY, 15 East Monroe, Phoenix, Arizona.

TABOR, THOMAS H., JR., 1313 North Second Street, Phoenix, Arizona.

VOSSKUHLER, JOHN WALTER, 1511 East Edison Street, Tucson, Arizona.

WALL, MARVIN J., 1448 East Sixth Street, Tucson, Arizona.

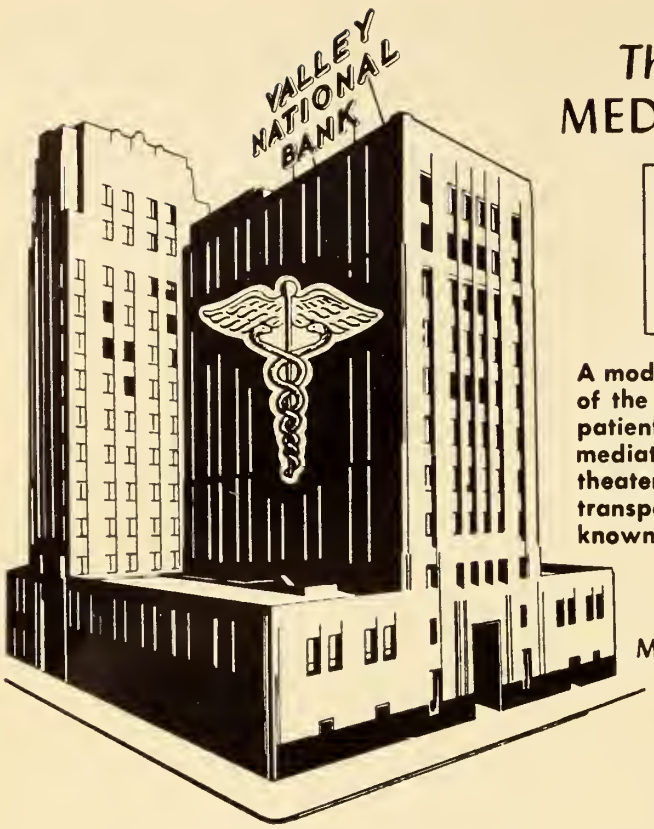
WICK, SAMUEL, 2500 East Van Buren, Phoenix, Arizona.

IMPORTANT NOTICE

AT THE ANNUAL PUBLISHER'S, EDITOR'S AND BUSINESS MANAGERS MEETING HELD IN CHICAGO, NOV. 7 & 8, IT WAS AGREED THAT ALL STATE MEDICAL JOURNALS WOULD SET UP A CLOSING DATE FOR MATERIAL. ANY MATERIAL RECEIVED AFTER THIS DATE WILL BE HELD OVER FOR THE NEXT MONTH.

THIS IS DUE TO THE LATENESS OF MANY JOURNALS COMING OUT AFTER THEIR RESPECTIVE PUBLISHING DATES.

ARIZONA MEDICINE JOURNAL'S CLOSING DATE IS THE 10th OF THE MONTH PRIOR TO DATE OF PUBLICATION.



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